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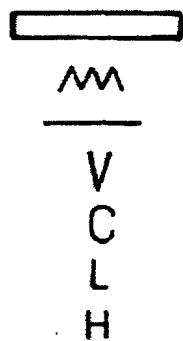
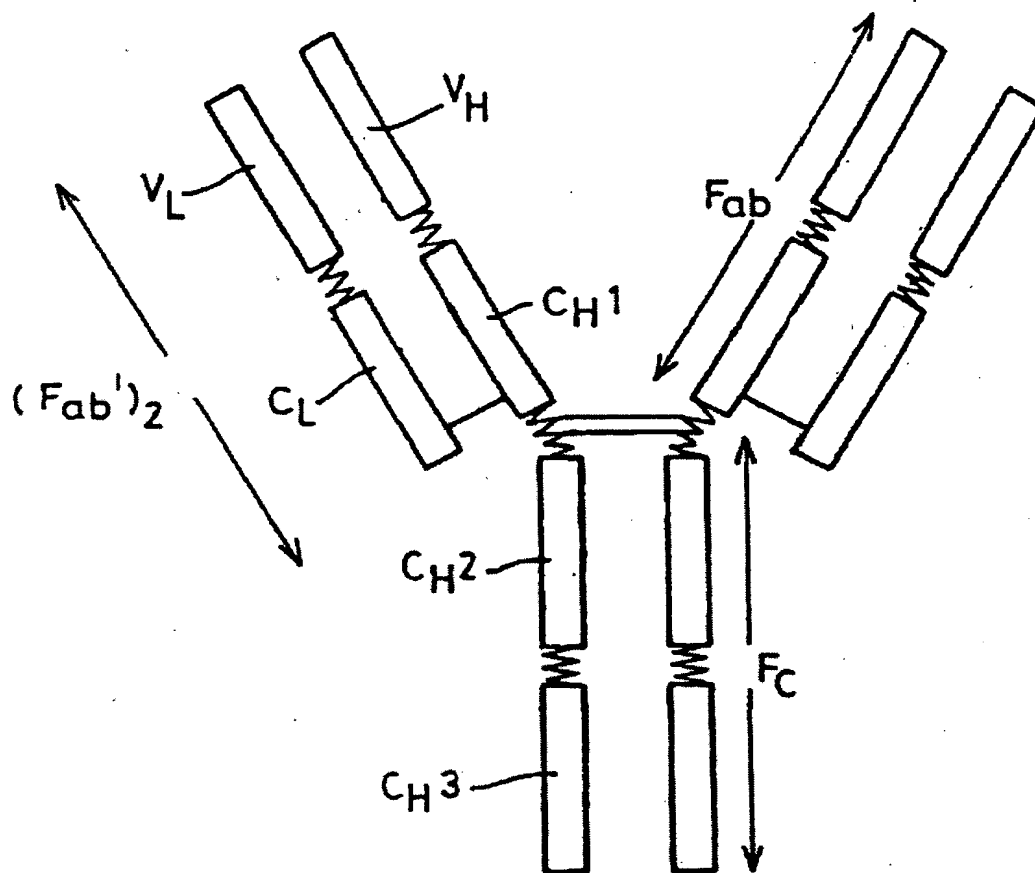


FIG. 1

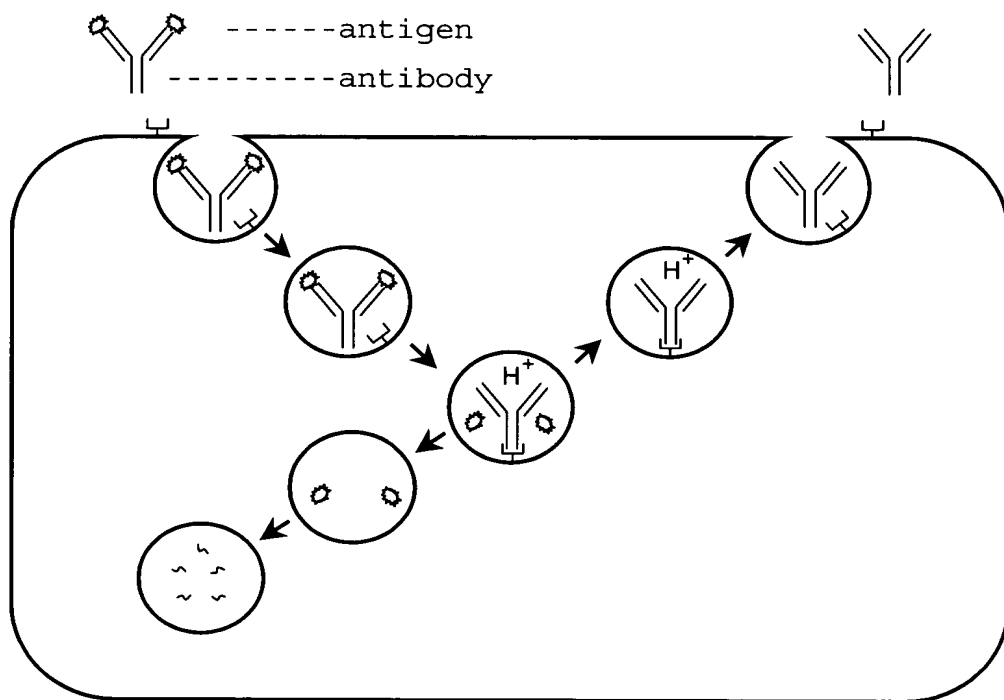


FIG. 2

FIG. 3A Amino Acid Sequences of OST577-IgG2M3 and OST577-IgG1

OST577 - VH	QVQLVESGGGVVQPGRSLRLSCAASGFTFSRYGMHWVRQAPGKGLEWAVISYDGSNKWTADSVKGRFTISRDNISKNTLFLQMHSLSRAADTGVYFCAKDQLYFGSQSPGHYMGQGTLVTVSS
IgG2M3 - CH	ASTKGPSVFPLAPCSRSTSESTAALGCLVKDYFPEPVTVSWNSGALTSGVHTTTPAVLQSSGLYSLSVSVTVPPSSNFGTQTTCNVDHKPSNTKVDKTVRKCCVCEPCCP APPAAPSVFLFPPKPKDTLMISRTPEVTCVVVDVSHEDPEVQFNWYVDGVEVHNKTKPREEQFNSTFRVSVLTVVHQDWLNGKEYKCKVSNKGLPAPIEKTISKTK GQPREPQVYTLPPSREEMTKNQVSLTCLVKGFYPSDIAVEMESNGQPENNYKTTTPMLDSGGSFFLYSKLTVDKSRWQQGNVFCSCVMHEALHNHYTQKSLSLSPSK
IgG1 - CH	ASTKGPSVFPLAPSSKSTSGGTAAAGCLVKDYFPEPVTVSWNSGALTSGVHTTTPAVLQSSGLYSLSVSVTVPPSSSLGTQTYICNVNHKPSNTKVDKVEPKSCDKHTHTCPPCP APELGGPSVFLFPPKPKDTLMISRTPEVTCVVVDVSHEDPEVKFNWYVDGVEVHNKTKPREEQFNSTFRVSVLTVLHQDWLNGKEYKCKVSNKALPAPIEKTISKAK GQPREPQVYTLPPSRDELTKNQVSLTCLVKGFYPSDIAVEMESNGQPENNYKTTTPVLDSGGSFFLYSKLTVDKSRWQQGNVFCSCVMHEALHNHYTQKSLSLSPGK
OST577 - VL	SYVLTPPPSVSPGQTARIITCGGDNIGSKSVNWFQKPKQAPVLVYDDNERPSGISERFSGNSGNTATLTISRVEAGDEADYYCQVWDSSSDHWVFGGTKLTVLG
LAMBDA2 - CL	QPKAAPSVTLFPPSSEELQANKATLVCLISDFYPGAVTVAMKADSSPVKAGVETTTTPSKQSNKKYAASVLSLTPEQWKSRSYSCQVTHEGSTVEKTVAPTECS

FIG. 3B Amino Acid Sequences of OST577-IgG2M3 and Its Mutants

IgG2M3	ASTKGPSVFPLAPCSRSTSESTAAIGCLVKDYFPEPTVSNVNSGALTSGVHTFPAVLQSSGLYSLSVTVTPSSNFGTQTYTCNVDHKPSNTKVDKTV
T250A	-----
T250C	-----
T250D	-----
T250E	-----
T250F	-----
T250G	-----
T250H	-----
T250I	-----
T250K	-----
T250L	-----
T250M	-----
T250N	-----
T250P	-----
T250Q	-----
T250R	-----
T250S	-----
T250V	-----
T250W	-----
T250Y	-----
L314A	-----
L314C	-----
L314D	-----
L314E	-----
L314F	-----
L314G	-----
L314H	-----
L314I	-----
L314K	-----
L314M	-----
L314N	-----
L314P	-----
L314Q	-----
L314R	-----
L314S	-----
L314T	-----
L314V	-----
L314W	-----
L314Y	-----
M428A	-----
M428C	-----
M428D	-----
M428E	-----
M428F	-----
M428G	-----

FIG. 3B Amino Acid Sequences of OST577-IgG2M3 and Its Mutants

M428H	-----
M428I	-----
M428K	-----
M428L	-----
M428N	-----
M428P	-----
M428Q	-----
M428R	-----
M428S	-----
M428T	-----
M428V	-----
M428W	-----
M428Y	-----
T250E/M428F	-----
T250Q/M428F	-----
T250Q/M428L	-----
IG2M3	ERKCCVECPCP
T250A	-----
T250C	-----
T250D	-----
T250E	-----
T250F	-----
T250G	-----
T250H	-----
T250I	-----
T250K	-----
T250L	-----
T250M	-----
T250N	-----
T250P	-----
T250Q	-----
T250R	-----
T250S	-----
T250V	-----
T250W	-----
T250Y	-----
L314A	-----
L314C	-----
L314D	-----
L314E	-----
L314F	-----
L314G	-----
L314H	-----
L314I	-----
L314K	-----

FIG. 3B Amino Acid Sequences of OST577-IgG2M3 and Its Mutants

L314M	-----	
L314N	-----	
L314P	-----	
L314Q	-----	
L314R	-----	
L314S	-----	
L314T	-----	
L314V	-----	
L314W	-----	
L314Y	-----	
M428A	-----	
M428C	-----	
M428D	-----	
M428E	-----	
M428F	-----	
M428G	-----	
M428H	-----	
M428I	-----	
M428K	-----	
M428L	-----	
M428N	-----	
M428P	-----	
M428Q	-----	
M428R	-----	
M428S	-----	
M428T	-----	
M428V	-----	
M428W	-----	
M428Y	-----	
T250E/M428F	-----	
T250Q/M428F	-----	
T250Q/M428L	-----	
IgG2M3	APPAAAPSVFLFPPPKDGLMI	SRTPEVTCVVVDVSHEDPEVQFNWYVDGVEVHNAKTKPREEQFNSTPRVSVLTVVHQDMLNGKEYCKVSNKGLPAPIEKTISKTK
T250A	-----A-----	-----
T250C	-----C-----	-----
T250D	-----D-----	-----
T250E	-----E-----	-----
T250F	-----F-----	-----
T250G	-----G-----	-----
T250H	-----H-----	-----
T250I	-----I-----	-----
T250K	-----K-----	-----
T250L	-----L-----	-----
T250M	-----M-----	-----
T250N	-----N-----	-----

FIG. 3B Amino Acid Sequences of OST577-IgG2M3 and Its Mutants

T250P	P
T250Q	Q
T250R	R
T250S	S
T250V	V
T250W	W
T250Y	Y
L314A	A
L314C	C
L314D	D
L314E	E
L314F	F
L314G	G
L314H	H
L314I	I
L314K	K
L314M	M
L314N	N
L314P	P
L314Q	Q
L314R	R
L314S	S
L314T	T
L314V	V
L314W	W
L314Y	Y
M428A	
M428C	
M428D	
M428E	
M428F	
M428G	
M428H	
M428I	
M428K	
M428L	
M428N	
M428P	
M428Q	
M428R	
M428S	
M428T	
M428V	
M428W	
M428Y	

FIG. 3B Amino Acid Sequences of OST577-IgG2M3 and Its Mutants

T250E/M428F	-----E-----
T250Q/M428F	-----Q-----
T250Q/M428L	-----Q-----
IgG2M3	GQPREPOVYTLPPSREEMTKNQVSLTCLVKGFYPSDIAVEWESNGQPENNYKTPPMLDSDGSFFLYSKLTVDKSRWQQGNVFCSCVMHEALHNYTQKSLSLSPSK
T250A	-----
T250C	-----
T250D	-----
T250E	-----
T250F	-----
T250G	-----
T250H	-----
T250I	-----
T250K	-----
T250L	-----
T250M	-----
T250N	-----
T250P	-----
T250Q	-----
T250R	-----
T250S	-----
T250V	-----
T250W	-----
T250Y	-----
L314A	-----
L314C	-----
L314D	-----
L314E	-----
L314F	-----
L314G	-----
L314H	-----
L314I	-----
L314K	-----
L314M	-----
L314N	-----
L314P	-----
L314Q	-----
L314R	-----
L314S	-----
L314T	-----
L314V	-----
L314W	-----
L314Y	-----
M428A	-----A-----
M428C	-----C-----
M428D	-----D-----

FIG. 3B Amino Acid Sequences of OST577-IgG2M3 and Its Mutants

M428E	E
M428F	F
M428G	G
M428H	H
M428I	I
M428K	K
M428L	L
M428N	N
M428P	P
M428Q	Q
M428R	R
M428S	S
M428T	T
M428V	V
M428W	W
M428Y	Y
T250E/M428F	F
T250Q/M428F	F
T250Q/M428L	L

FIG. 3C Amino Acid Sequences of OST577-IgG1 and Its Mutants

IgG1	ASTKGPSVFLPAPSKSTSGTAALGCLVKDYFPEPVTVSWNSGALTSGVHTFPAVLQSSGLYSLSSVTVFPPSSSLGTQTYICNVNHKPSNTIKVDKKV
T250D	-----
T250E	-----
T250Q	-----
M428F	-----
M428L	-----
T250E/M428F	-----
T250Q/M428L	-----
IgG1	EPKSCDKHTCPCCP
T250D	-----
T250E	-----
T250Q	-----
M428F	-----
M428L	-----
T250E/M428F	-----
T250Q/M428L	-----
IgG1	APELLGGPSVFLFPPPKDTLMISRTPEVTCVVVDVSHEDPEVKFNWYVDGVEVHNAKTKPREEQYNSTYRVVSVLTVLHQDWLNGKEYKCKVSNKALPAPIEKTISKAK
T250D	-----D-----
T250E	-----E-----
T250Q	-----Q-----
M428F	-----
M428L	-----
T250E/M428F	-----E-----
T250Q/M428L	-----Q-----
IgG1	GQPREPOVYTLPPSRDELTKNQVSLTCLVKGFYPSDIAVEWESNGQPENNYKTPPVLDSDGSFFLYSKLTVDKSRWQQGNVFCSVNHEALHNHYTQKSLSLSPGK
T250D	-----
T250E	-----
T250Q	-----
M428F	-----F-----
M428L	-----L-----
T250E/M428F	-----F-----
T250Q/M428L	-----L-----

FIG. 3D Amino Acid Sequences of Hu1D10-IgG2M3 and Hu1D10-IgG1

Hu1D10 - VH	QVQLQESGPGLVKPSETLSLTCTVSGFSLTNYGVHVRQSPGKGLEWIGVKWGGSTETNAAFISRLTISKDTSKQVSLKLSLTAADTAVTYCARNDRYAMDYWGQGLVTYVSS
IgG2M3 - CH	ASTKGPVFPFLAPCSRSTSESTAALGCLVKDYFPEPVTVSWNSGALTSGVHTFPAVLQSSGLYSLSSVTVTPSSNFGTQTYTCNVDPKPSNTKVDKTVRKCCVCECPPCP APPAAAPSVFLFPPKPKDTLMISRTPEVTCVVDVSHEDPEVQFNWYVDGVEVHNAKTKPREEQFNSTFRVVSVLTVVHQDWLNGKEYCKCKVSNKGLPAPIEKTISKTK GQPREPQVYTLPPSREEMTKNQVSLTCLVKGFYPSDIAVEWESNGQPENNYKTTTPMLDSDGSFFLYSKLTVDKSRHQQGNVFPSCSVMEALHNHYTQKSLSLSPSK
IgG1 - CH	ASTKGPVFPFLAPSSKSTSGGTAALGCLVKDYFPEPVTVSWNSGALTSGVHTFPAVLQSSGLYSLSSVTVTPSSSLGTQTYICNVNHPKPSNTKVDKKEPKSCDKTHTCPPCP APELLGGPSVFLFPPKPKDTLMISRTPEVTCVVDVSHEDPEVKFNWYVDGVEVHNAKTKPREEQYNSTYRVVSVLTVLHQDWLNGKEYCKKVSNNKALPAPIEKTISKAK GQPREPQVYTLPPSRDELTKNQVSLTCLVKGFYPSDIAVEWESNGQPENNYKTTTPVLDSDGSFFLYSKLTVDKSRHQQGNVFPSCSVMEALHNHYTQKSLSLSPGK
Hu1D10 - VL	DIQMTQSPSSLSASVGDRVTITCRASENIYSYLAWYQQKPKAPLLVSNAKTLAEGVPSRFSGSGSGKQFTLTITSSLPQEDFATYYCQHHYGVNSYPFGGQTKLEIK
KAPPA - CL	RTVAAPSVFIFPPSDEQLKSGTASVCLLNNFYPREAKVQWKVDNALQSGNSQESVTEQDSKDSTYSLSSTLTLSKADYEKHKVYACEVTHQGLSSPTTKSFNRGEC

FIG. 3E Amino Acid Sequences of Hu1D10-IgG2M3 and Its Mutants

IgG2M3	ASTKGPSVFPLAPCSRSTSESTAALGCLVKKDYFPPEPTVSVNSGALTSGVHTFPAVLQSSGLYSLSSVVTVPSSNFGTQTYYTTCNVDHKPSNTIKVDKIV
M428L	-----
T250Q/M428L	-----
IgG2M3	ERKCCVECP
M428L	-----
T250Q/M428L	-----
IgG2M3	APPAAAPSVTLFPPKPKDTLMISRTPEVTCVVVDVSHEDPEVQFNWYVDGVEVHNAKTKPREEQFNSTFRVWSVLTWVHQDWLNGKEYKCKVSNKGLPAPIEKTISKTK
M428L	-----
T250Q/M428L	-----Q-----
IgG2M3	GQPREPQVYTLPPSREEMTKNQVSLTCLVKGFYPSDIAVEWESNGQPENNYKTTTPMLDSGDSFFLYSKLTVDKSRHQQGNVFSCSVMHEALHNHYTQKSLSLSPSK
M428L	-----
T250Q/M428L	-----L-----L-----

FIG. 3F Amino Acid Sequences of Hu1D10-IgG1 and Its Mutants

IgG1	ASTKGPSVFPLAPSSKSTSGGTAALGCLVKDYFPEPVTVSWNSGALTSGVHTFPAVLQSSGLYSLSSVTVFESSSLGTQTYICNVNHKPSNTKVDKKV	
M428L	-----	
T250Q/M428L	-----	
IgG1	EPKSCDKHTHTCPPCP	
M428L	-----	
T250Q/M428L	-----	
IgG1	APELLGGPSVFLFPPPKDTLMISRTPEVTCVVVDVSHEDPEVKFNWYVDGVEVHNAKTKPREEQYNSTYRVVSVLTVLHQDWLNGKEYKCKVSNKALPAPIEKTISKAK	
M428L	-----	T250Q/M428L
	-----Q-----	
IgG1	GQPREPQVYTLPPSRDELTKNQVSLTCLVKGFYPSDIAVEWESNGQPENNYKTTTPVLDSDGSFFLYSKLTVDKSRWQQGNVFCSCVMHEALHNHYTQKSLSLSPGK	
M428L	-----	
T250Q/M428L	-----L-----	

FIG. 3G Amino Acid Sequences of Hu1D10-IgG3 and Hu1D10-IgG4

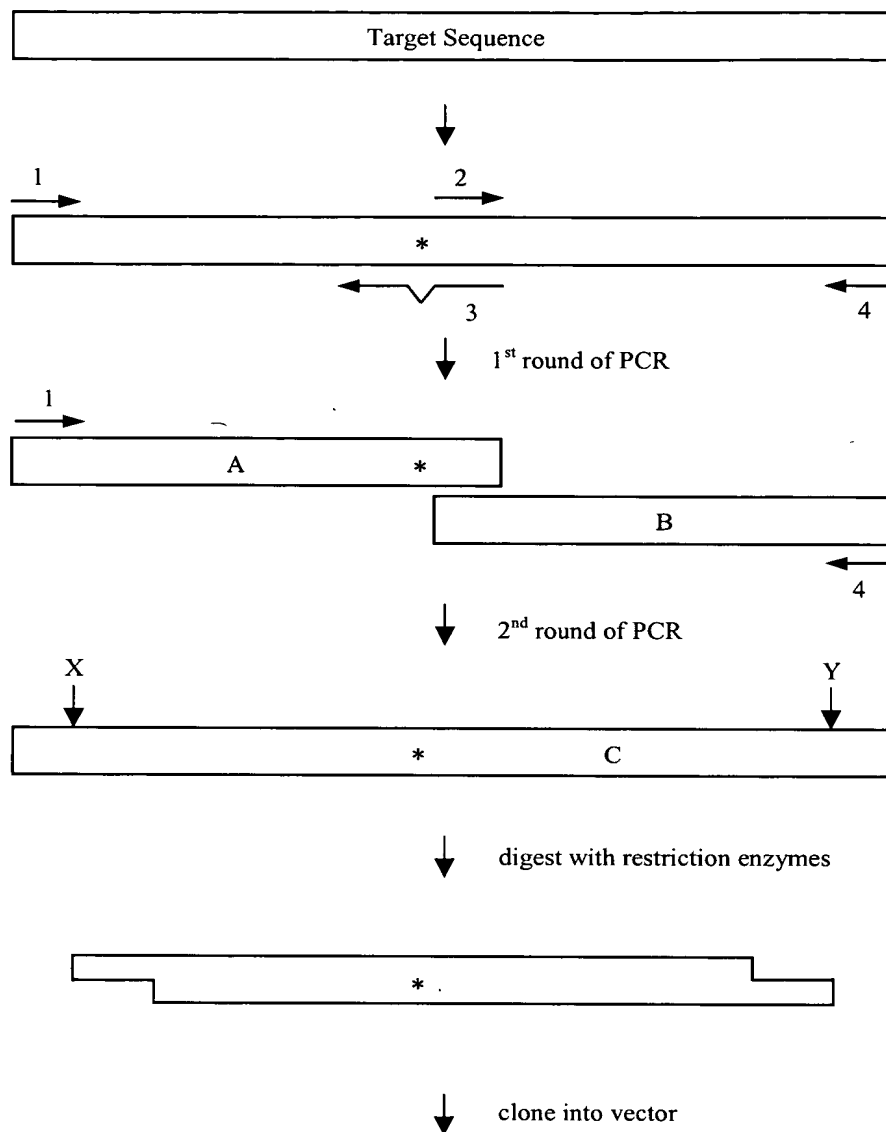
Hu1D10-VH	QVQLQESGPGLVKPSSETLSLTCTVSGFSLTNYGVHWRQSPGKLEWIGVKWGGSTEYNAAFISRLTISKDTSKNQVSLKLSLTAADTAVYYCARNDRYAMDYWGQGTILVTVSS
IgG3-CH	ASTKGPSVFPLAPCSRSTSGGTAALGCLVKDYFPEPVTVSWNSGALTSGVHTFPAVLQSSGLYSLSSVTVTPSSSLGTQTYTCNVNHKPSNTKVKDKRV ELKTPLEGDTHTCPRCPEPKSCDTPPPCPRCPEPKSCDTPPPCPRCPEPKSCDTPPPCPRCP APELLGGPSVFLFPPKPKDTLMISRTEPVTCVVVDVSHEDPEVQPKWYVDGVEVHNAKTKLREEQYNSTFRVVSVLTVLHQDWLNGKEYKCKVSNKALPAPIEKTISKAK GQPREPQVYTLPPSRREEMTKNQVSLTCLVKGFYPSDIAVEWESNGQPENNYNTPPMLDSDGSPFLYSKLITVDKSRWQOGNIIFSCSVMEALHNHYTQKSLSLSPGK
IgG4-CH	ASTKGPSVFPLAPCSRSTSESTAALGCLVKDYFPEPVTVSWNSGALTSGVHTFPAVLQSSGLYSLSSVTVTPSSSLGTQTYTCNVDHKPSNTKVDKRVESKYGPPCPSCP APEFLGGPSVFLFPPKPKDTLMISRTEPVTCVVVDVSOEDPEVQFNWYVDGVEVHNAKTKRPREQFNSTYRVVSVLTVLHQDWLNGKEYKCKVSNKGLPSSIEKTIKAK GQPREPQVYTLPPSQEEMTKNQVSLTCLVKGFYPSDIAVEWESNGQPENNYKTTTPPVLDSDGSPFLYSRLITVDKSRWQEGNVFSCSVMEALHNHYTQKSLSLGLK
Hu1D10-VL	DIQMTQSPSSLSASVGDRVTITCRASENIYSYLAWYQQKPKAPKLLVSNAKTLAEGVPSRPSGSGKGQFTLTISLQPEDFATYYCOHHYGNISYPFGQGTGLEIK
KAPPA-CL	RTVAAPSVFIFPPSDDEQLKSGTASVCLLNNFYPREAKVQWKVDNALQSGNSQESVTEQDSKDSSTYSLSSTLTLSKADYEKHKVYACEVTHQGLSSPVTKSFNRGEC

FIG. 3H Amino Acid Sequences of Hu1D10-IgG3 and Its Mutant

IgG3 M428L	ASTKPSVFPLAPCSRSTSGTAAALGCLVKDYFPEPVTVSWNSGALTSGVHTFPAVLQSSGLYSLSVVTVTPSSSLGTQTYTCNVNHKPSNTKVDKRV -----
IgG3 M428L	ELKTPGLGDTHTTCPRCP -----
IgG3 M428L	EPKSCDTPPPCPRCP -----
IgG3 M428L	EPKSCDTPPPCPRCP -----
IgG3 M428L	EPKSCDTPPPCPRCP -----
IgG3 M428L	APELLGGPSVFLPPPKPKDTLMISRTPEVTCVVVDVSHEDPEVQFKWYVDGVEVHNAKTKLREEQYNSTFRVVSVLTVLHQDMLNGKEYCKKVSNNKALPAPIEKTISKAK -----
IgG3 M428L	GQPREPQVYTLPPSREEMTKNQVSLTCLVKGFYPSDIAVEWESNGQPENNYNTTPPMLDSGDFLYSKLTVDKSRWQOGNI FSCSVNHEALHNRYTQKSLSPGK -----L-----

FIG. 3I Amino Acid Sequences of Hu1D10-IgG4 and Its Mutants

IgG4	ASTKGPSVFPLAPCSRSTSESTAALGCLVKDYFPEPVTVSWNSGALTSGVHTFPAVLQSSGLYSLSSVVTVPSSSLGTQTYTCNV	DHKPSNTKVDKRV
M428L	-----	-----
T250Q/M428L	-----	-----
IgG4	ESKYGPPCPSCP	
M428L	-----	
T250Q/M428L	-----	
IgG4	APEFLGGPSVFLFPPPKPKDTLMISRTPEVTCVVVDVSDPDPEVFQFNWYVDGVEVHNAKTKPREEQFNSTYRVVSVLTVLHQDWLNGKEYKCKVSNKGLPSSIEK	TISKAK
M428L	-----	-----
T250Q/M428L	-----Q-----	-----
IgG4	GQPREPQVYTLPPSQEEMTKNQVSLTCLVKGFYPSDIAVEWESNGQPENNYKTPPVLDSDGSFPLYSR	LTVDKSRWQEGNVPFSCSVMH
M428L	-----	-----L-----
T250Q/M428L	-----	-----L-----



* = primer mismatches

FIG. 4

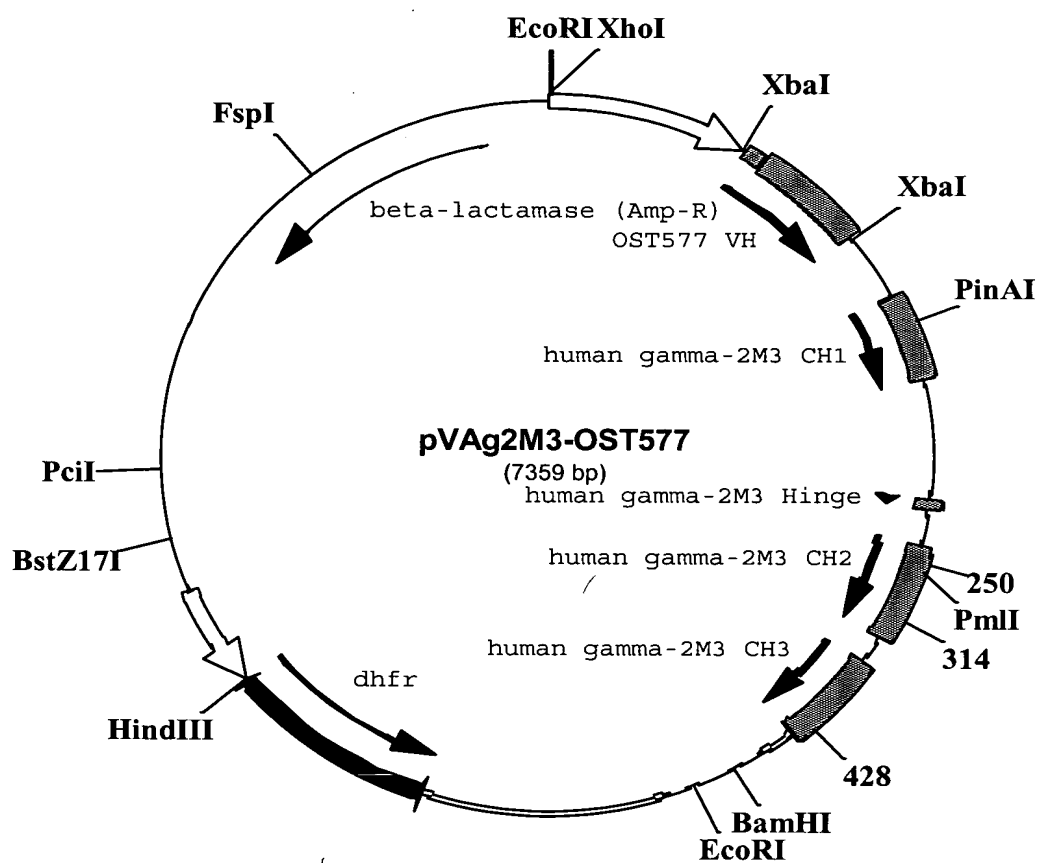


FIG. 5A

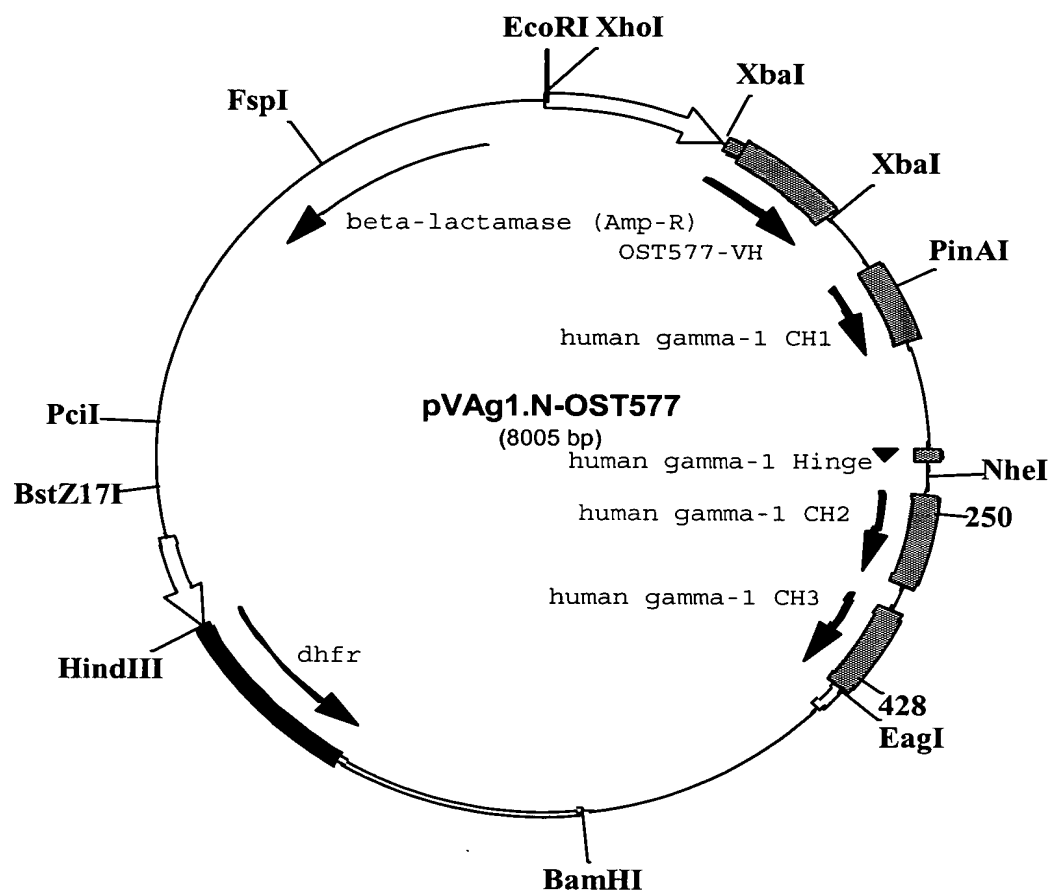


FIG. 5B

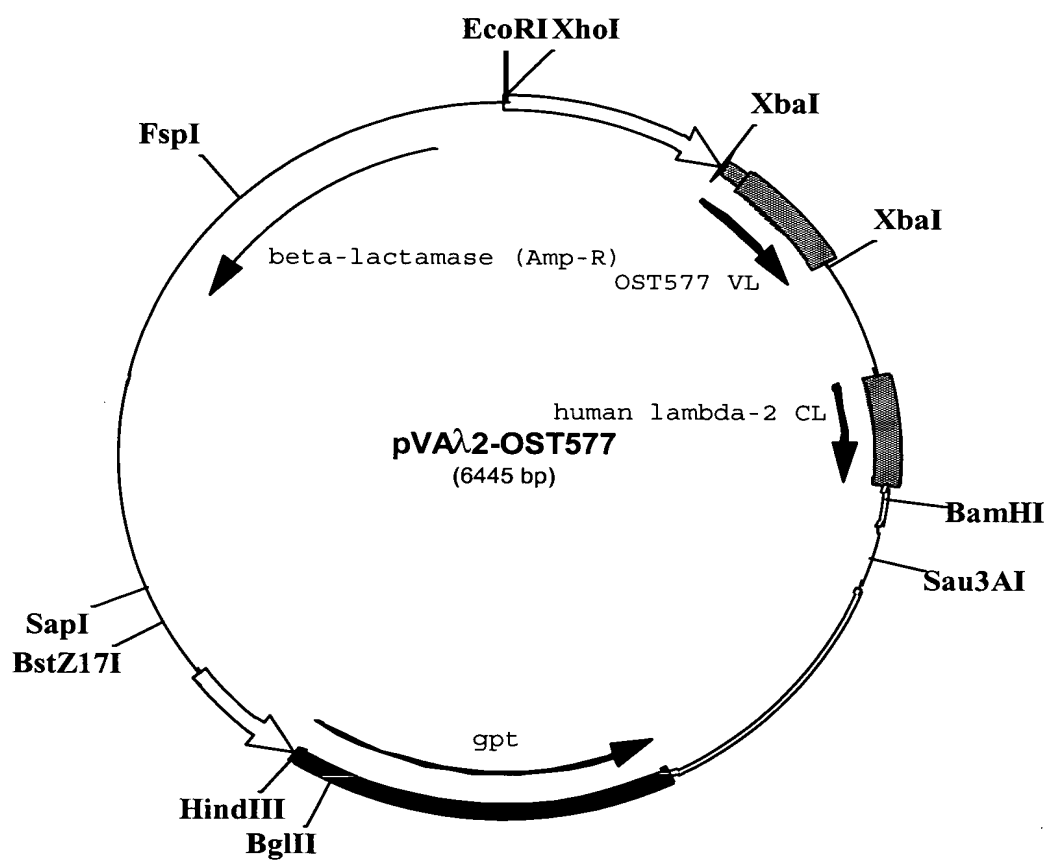


FIG. 6

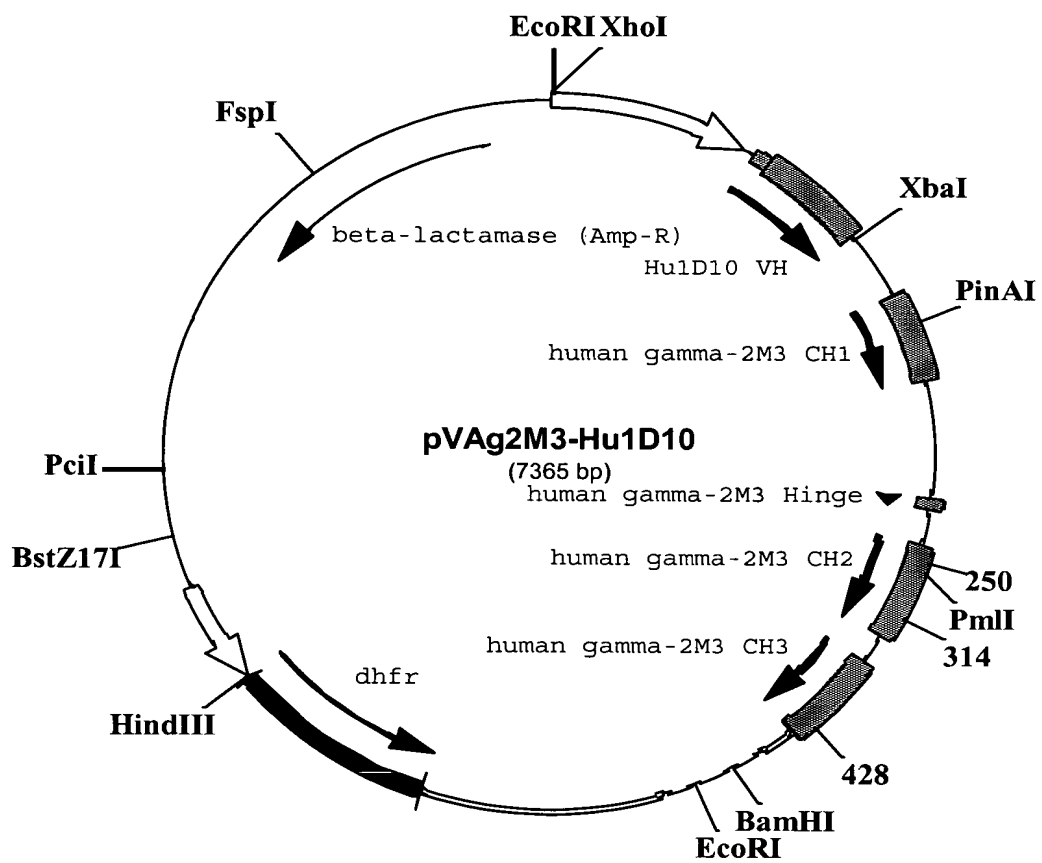


FIG. 7A

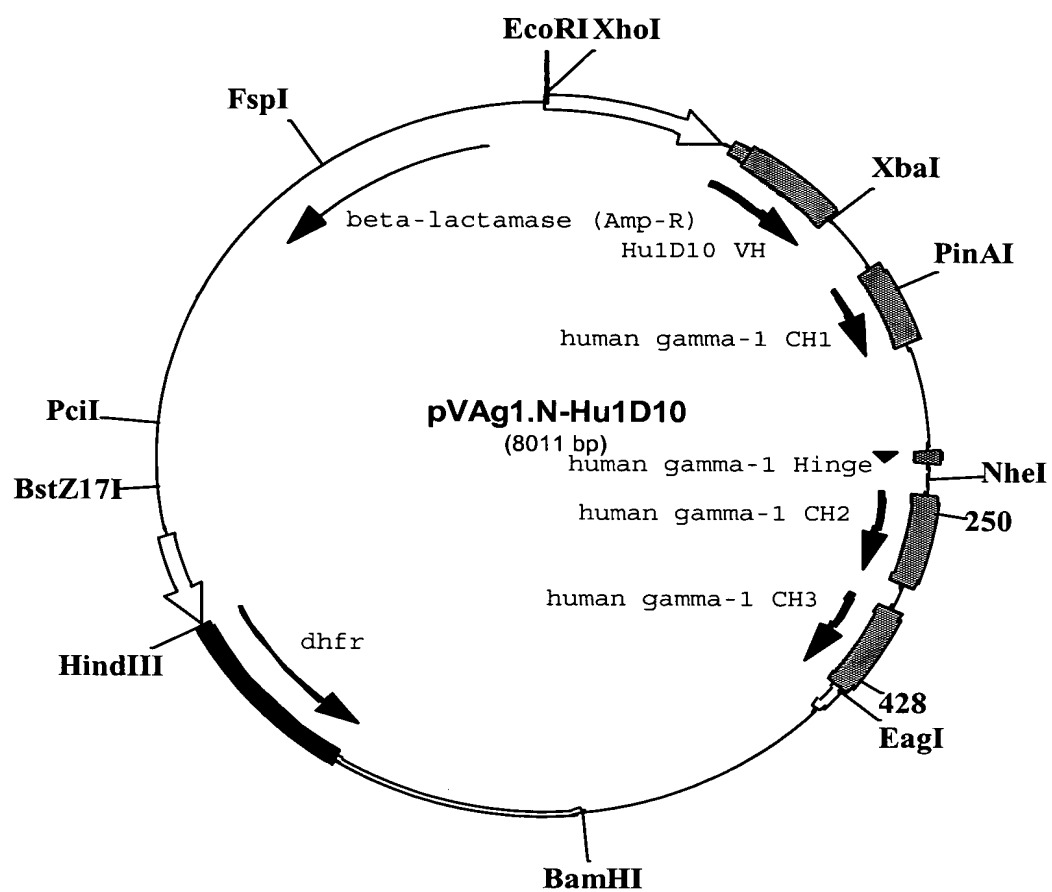


FIG. 7B

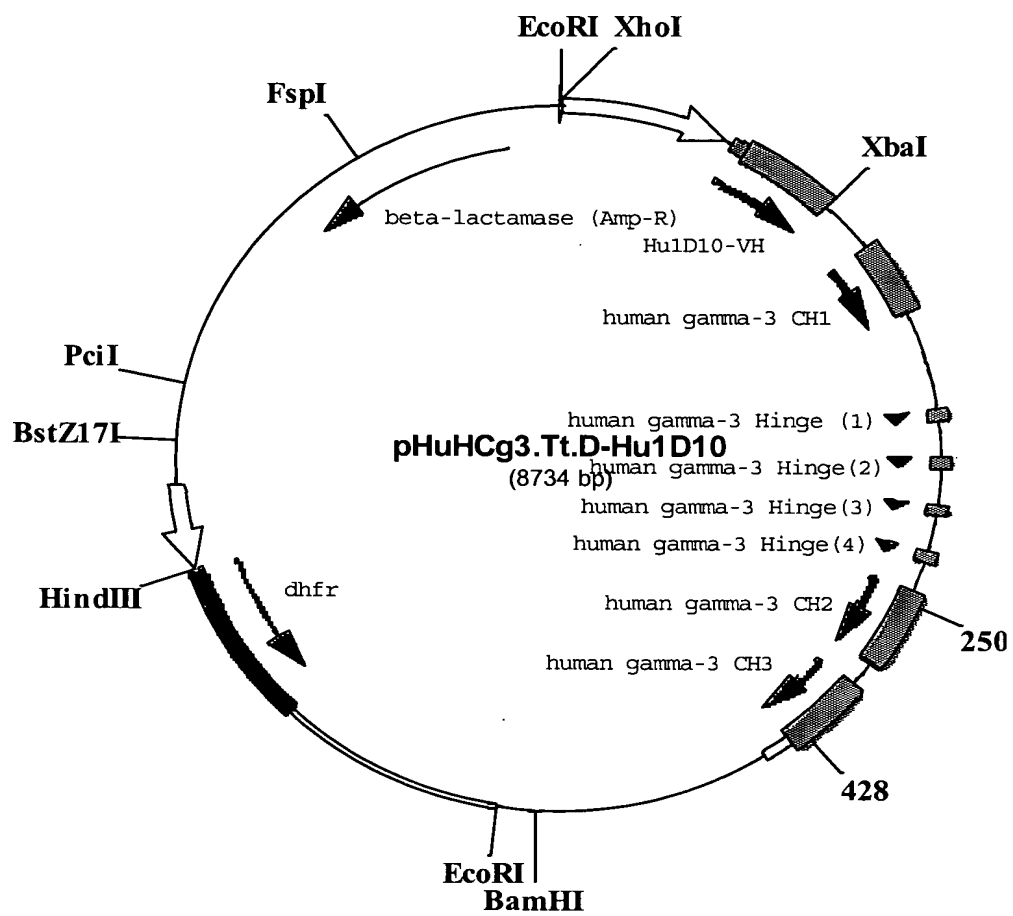


FIG. 7C

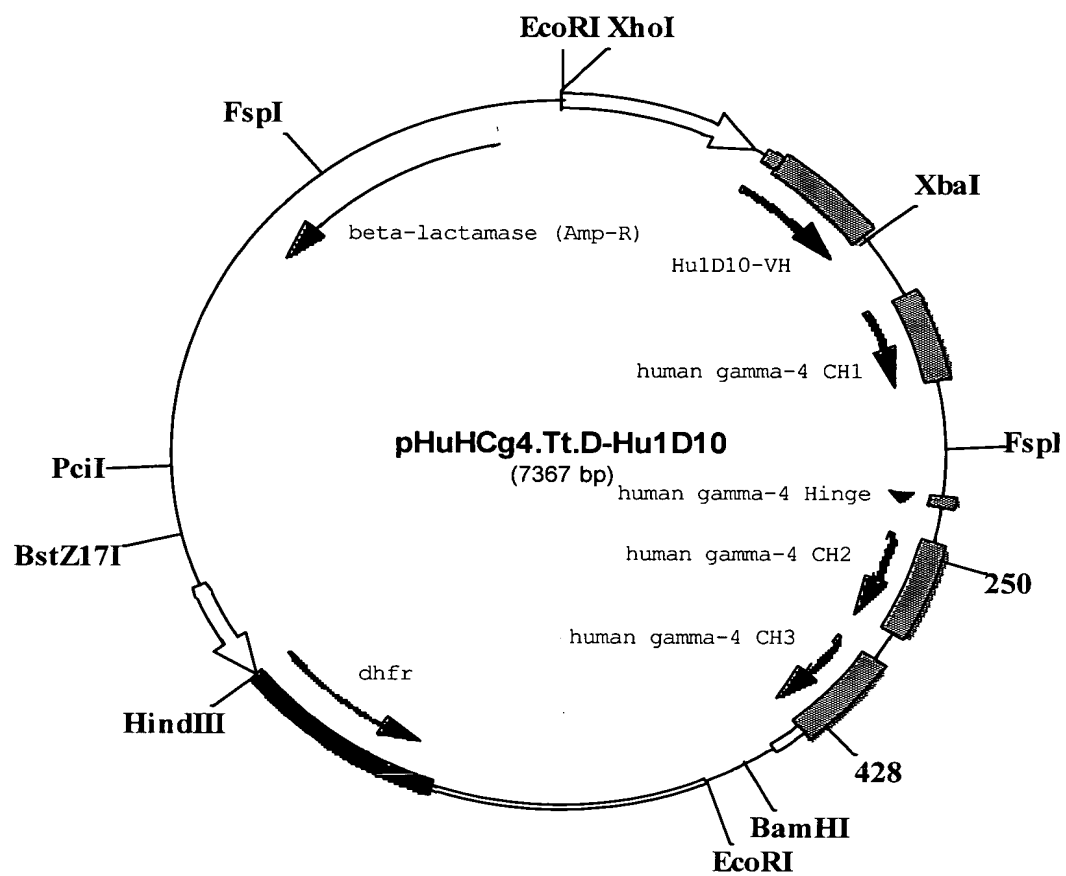


FIG. 7D

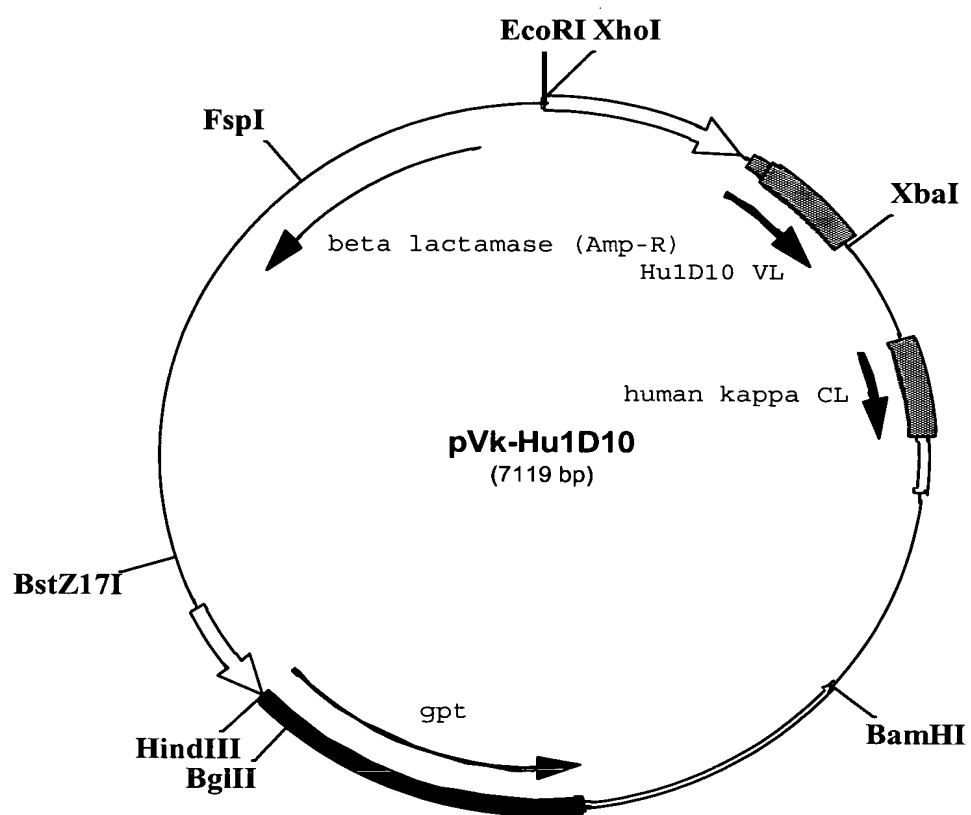


FIG. 8

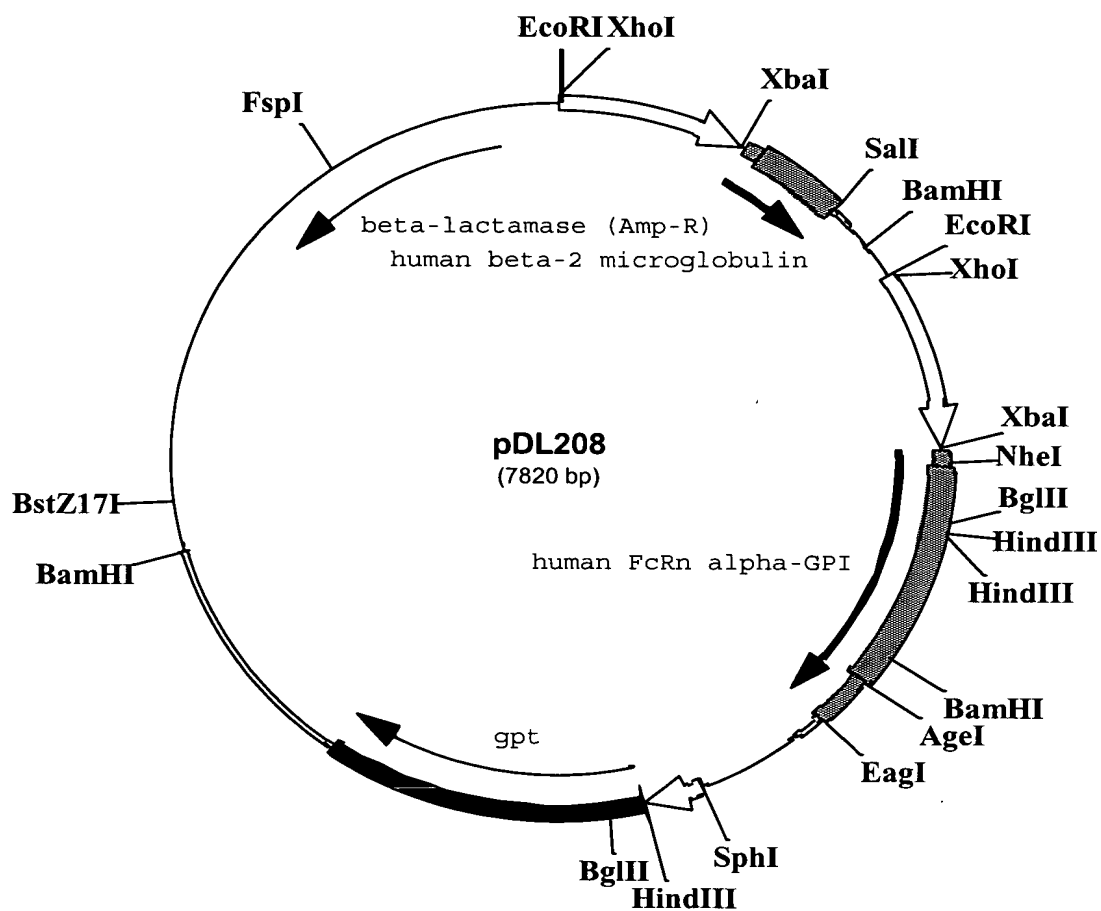


FIG. 9A

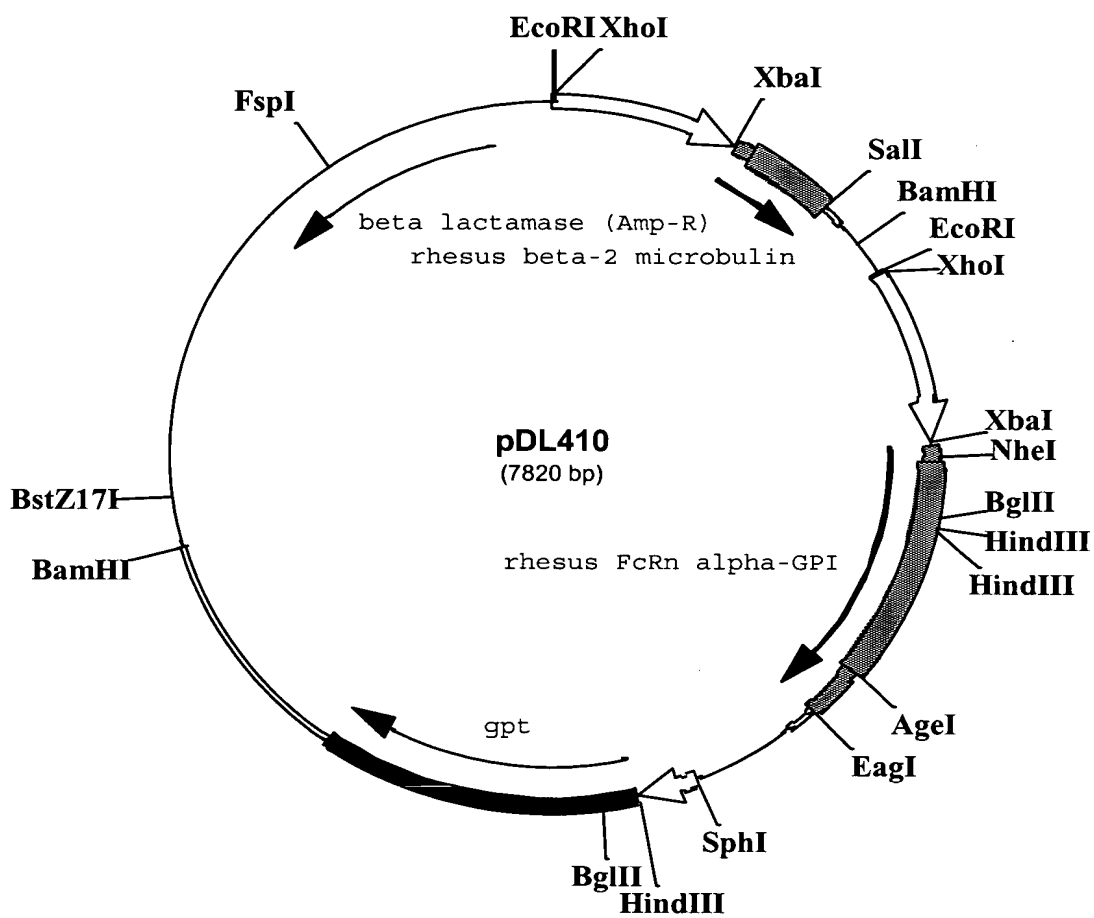


FIG. 9B

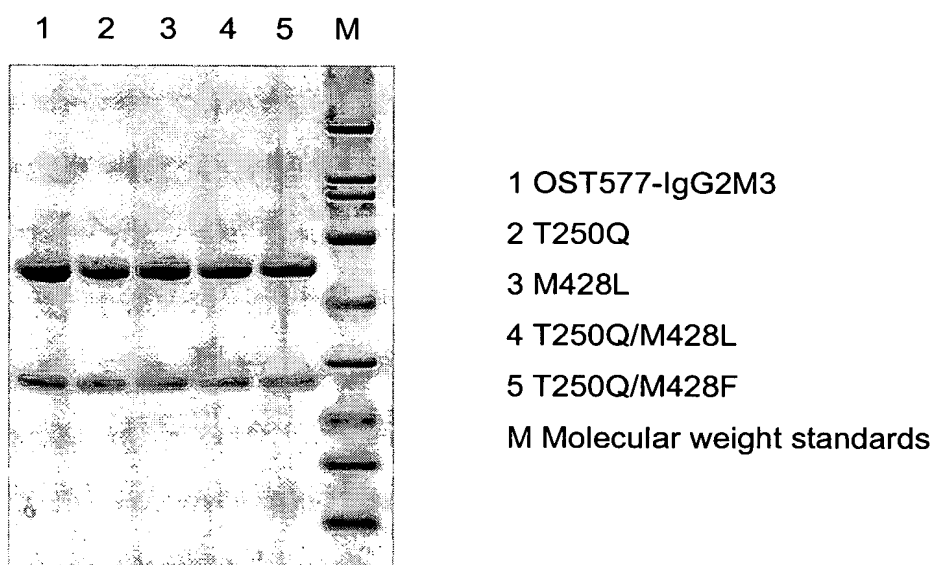
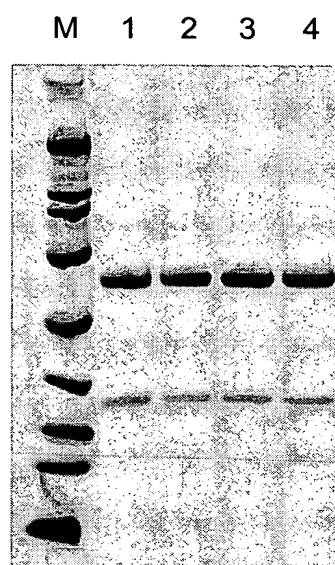


FIG. 10A



M Molecular weight standards

1 OST577-IgG1

2 T250E

3 M428F

4 T250E/M428F

FIG. 10B

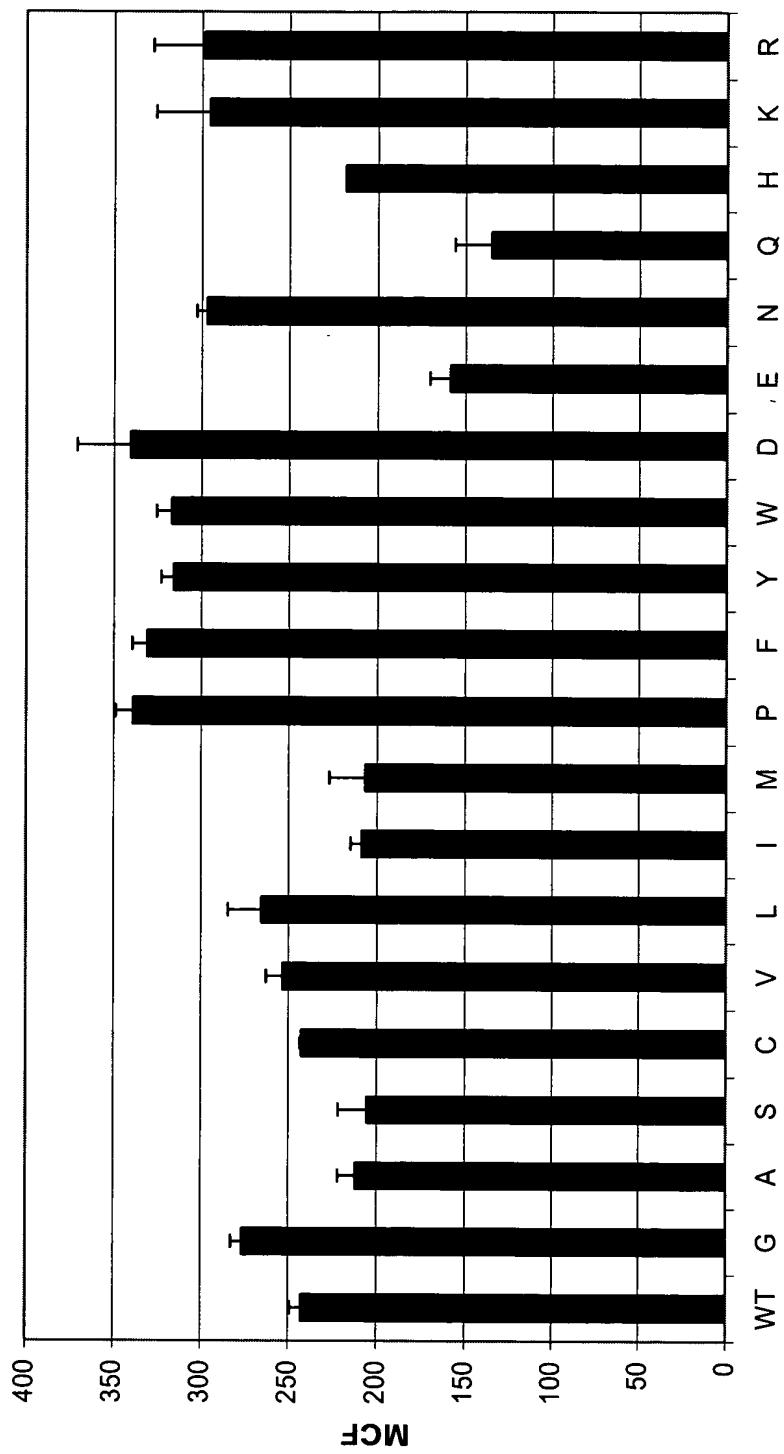


FIG. 11A

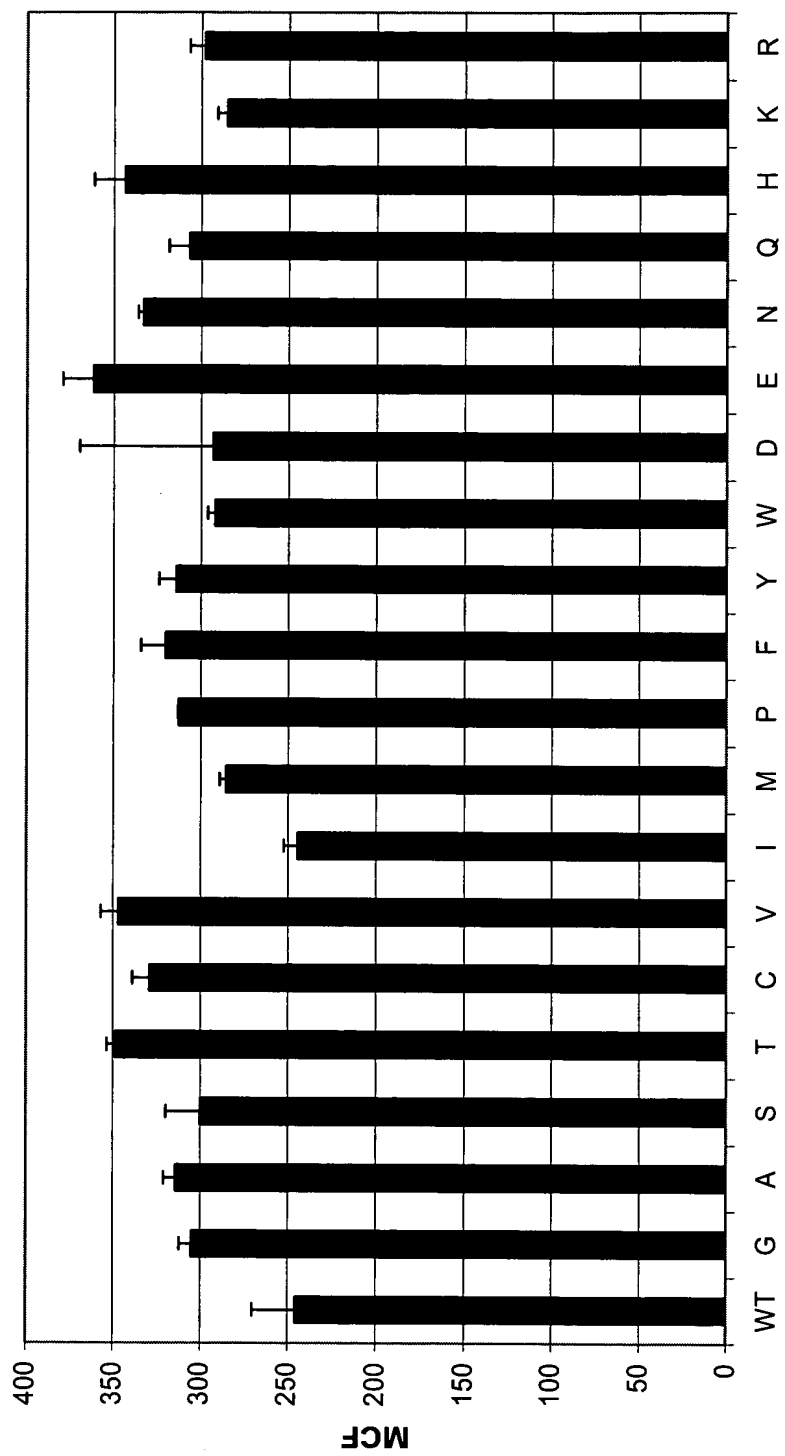


FIG. 11B

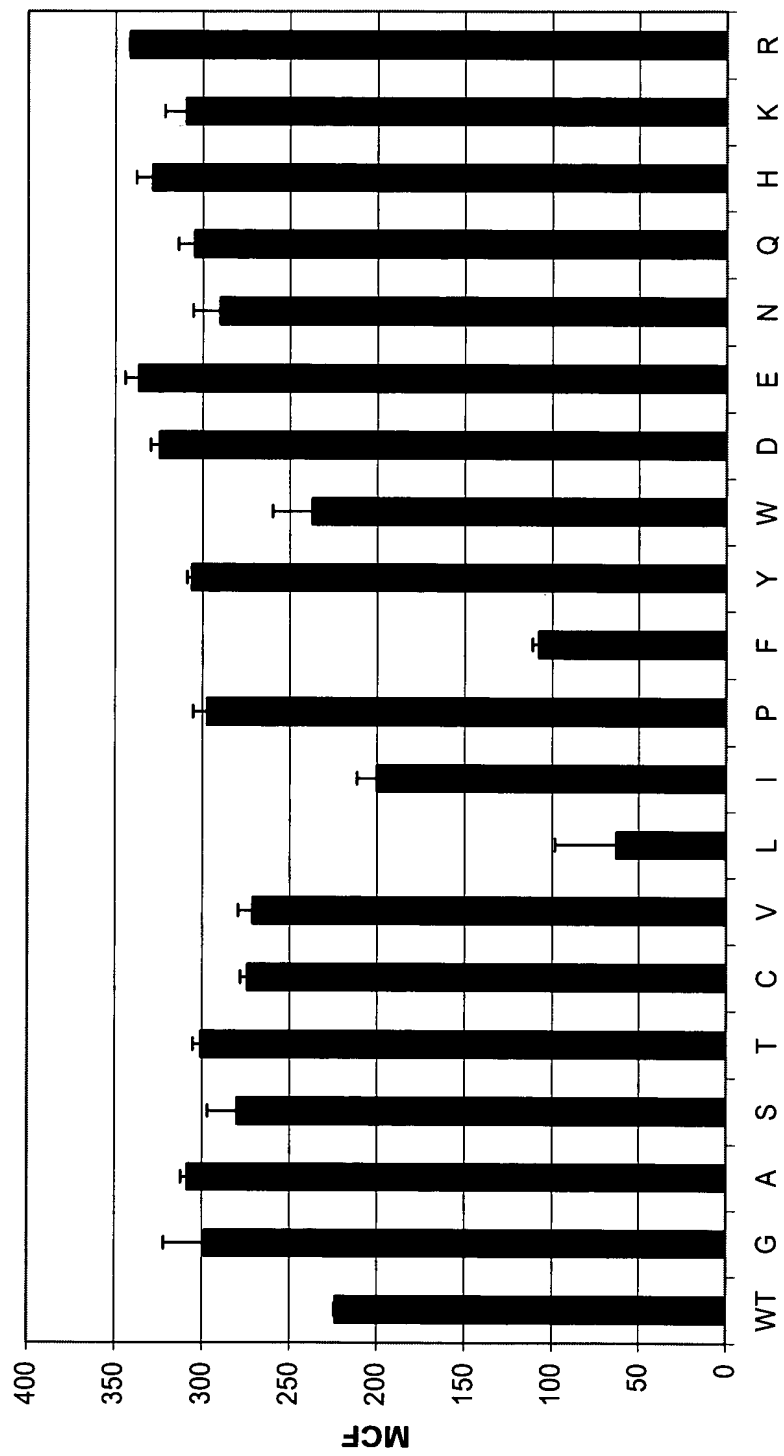


FIG.11C

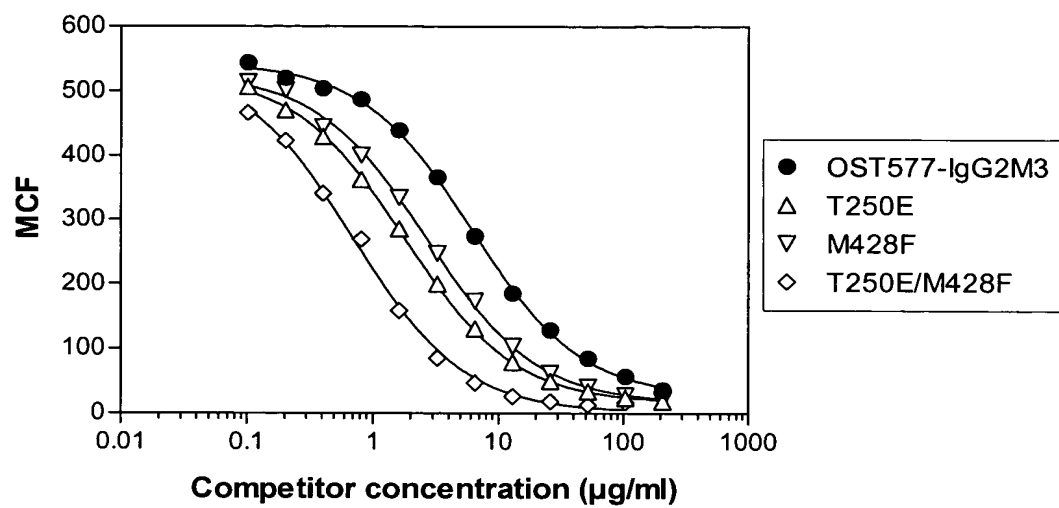


FIG. 12A

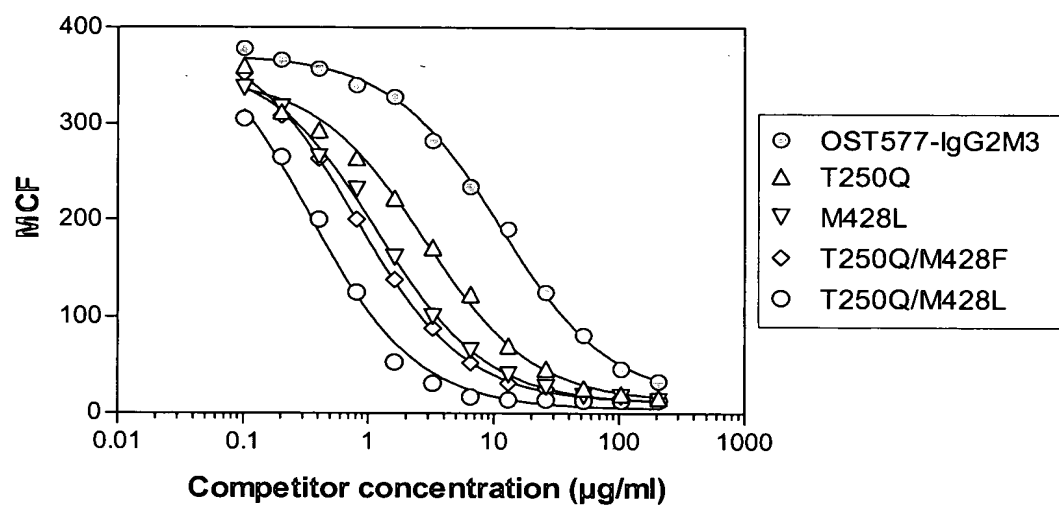


FIG. 12B

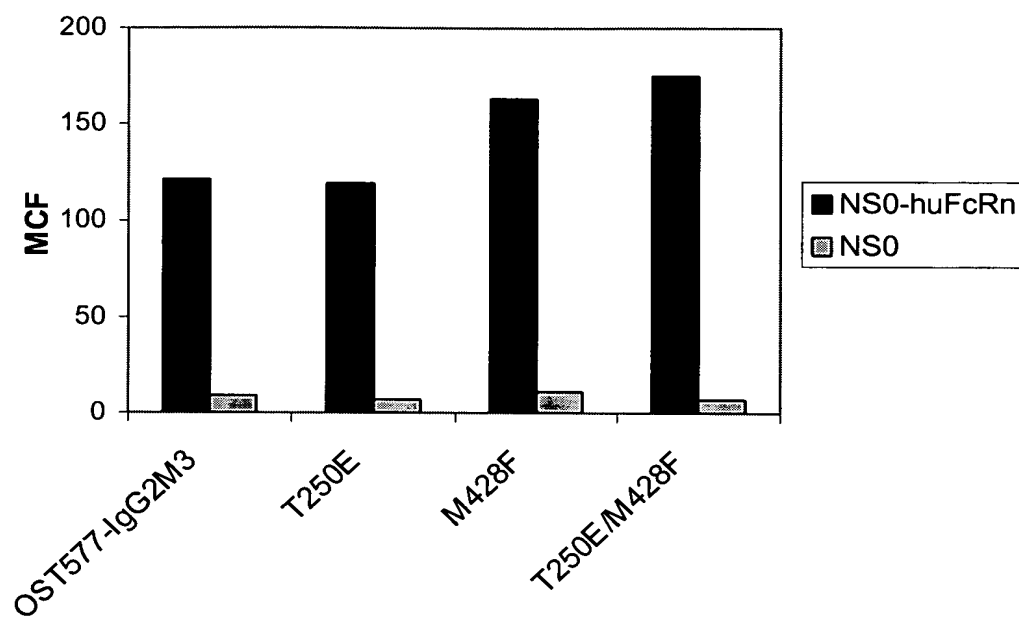


FIG. 13

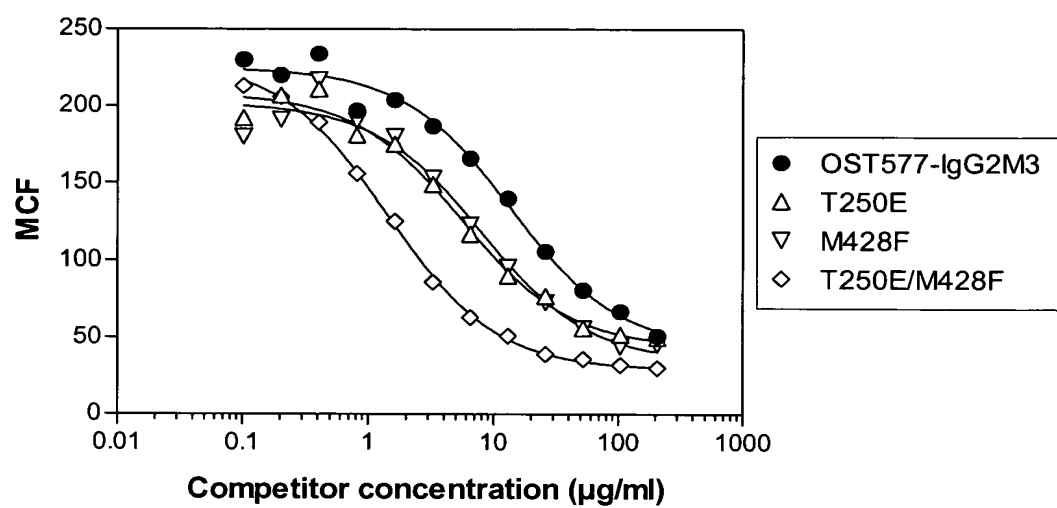


FIG. 14

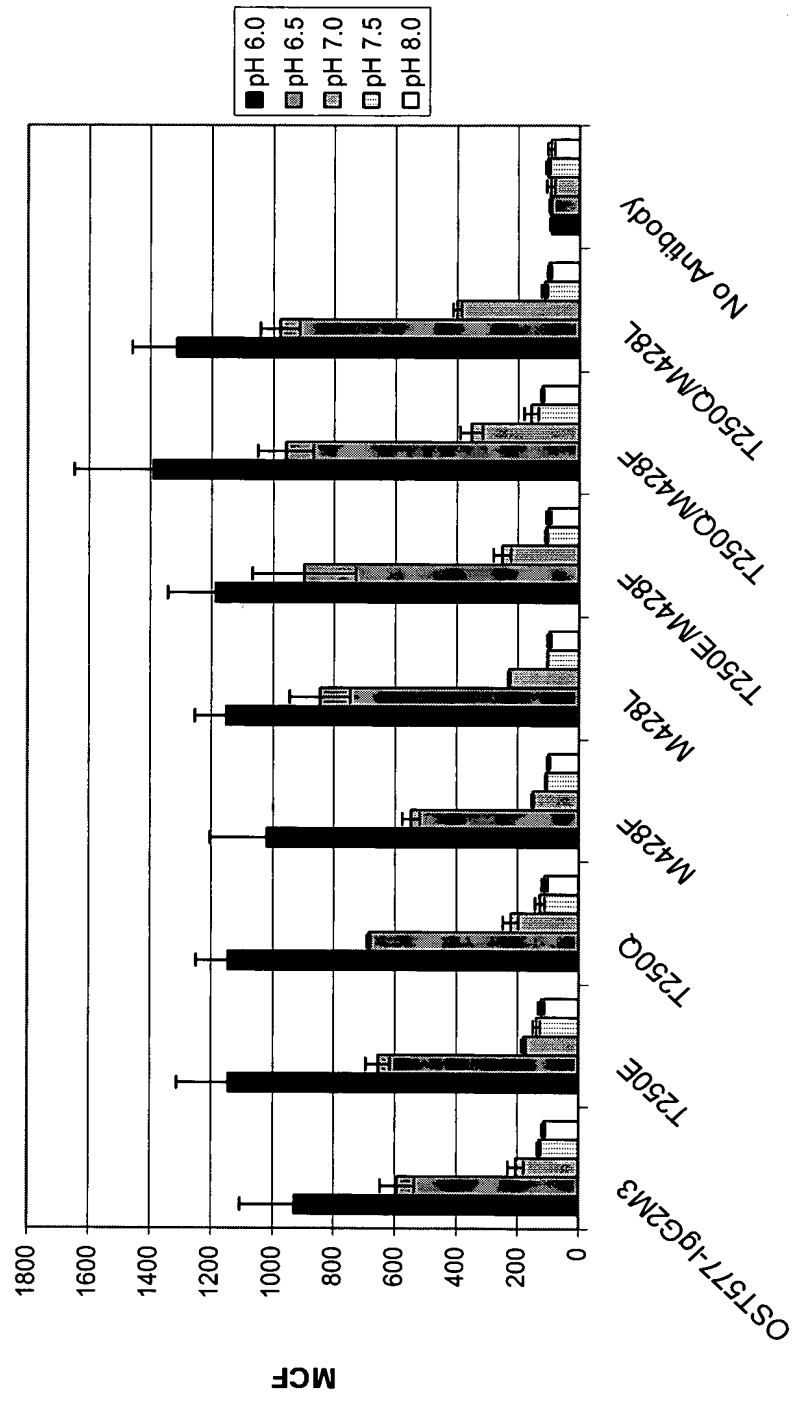


FIG. 15A

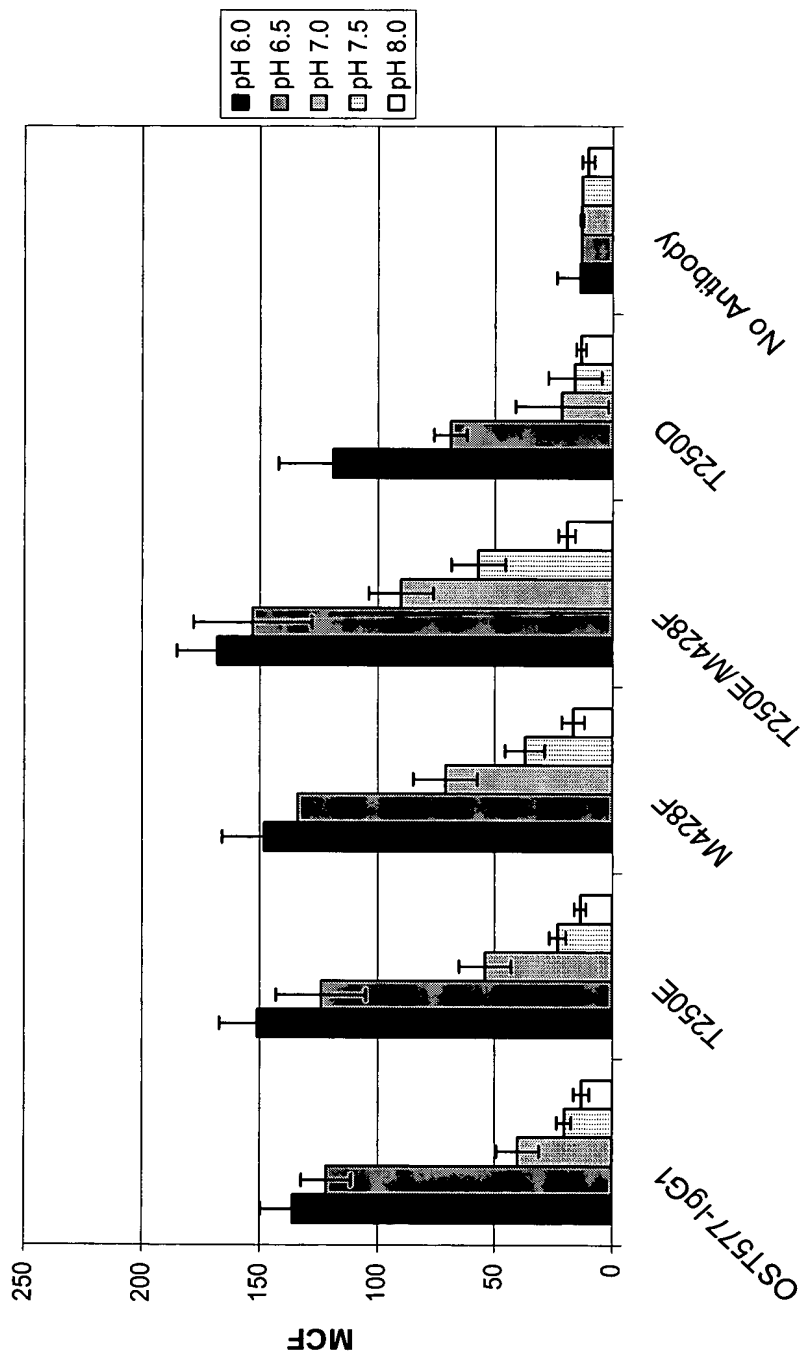


FIG. 15B

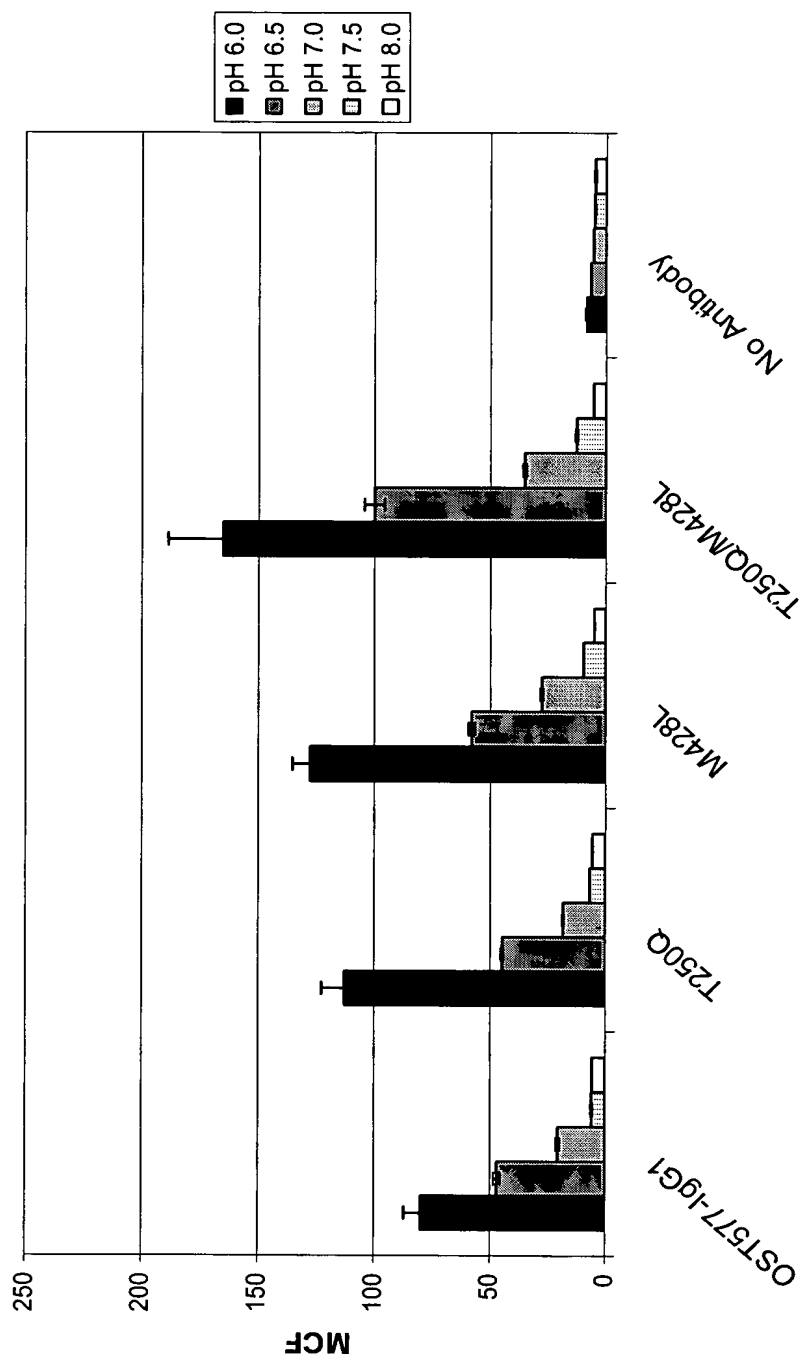


FIG. 15C

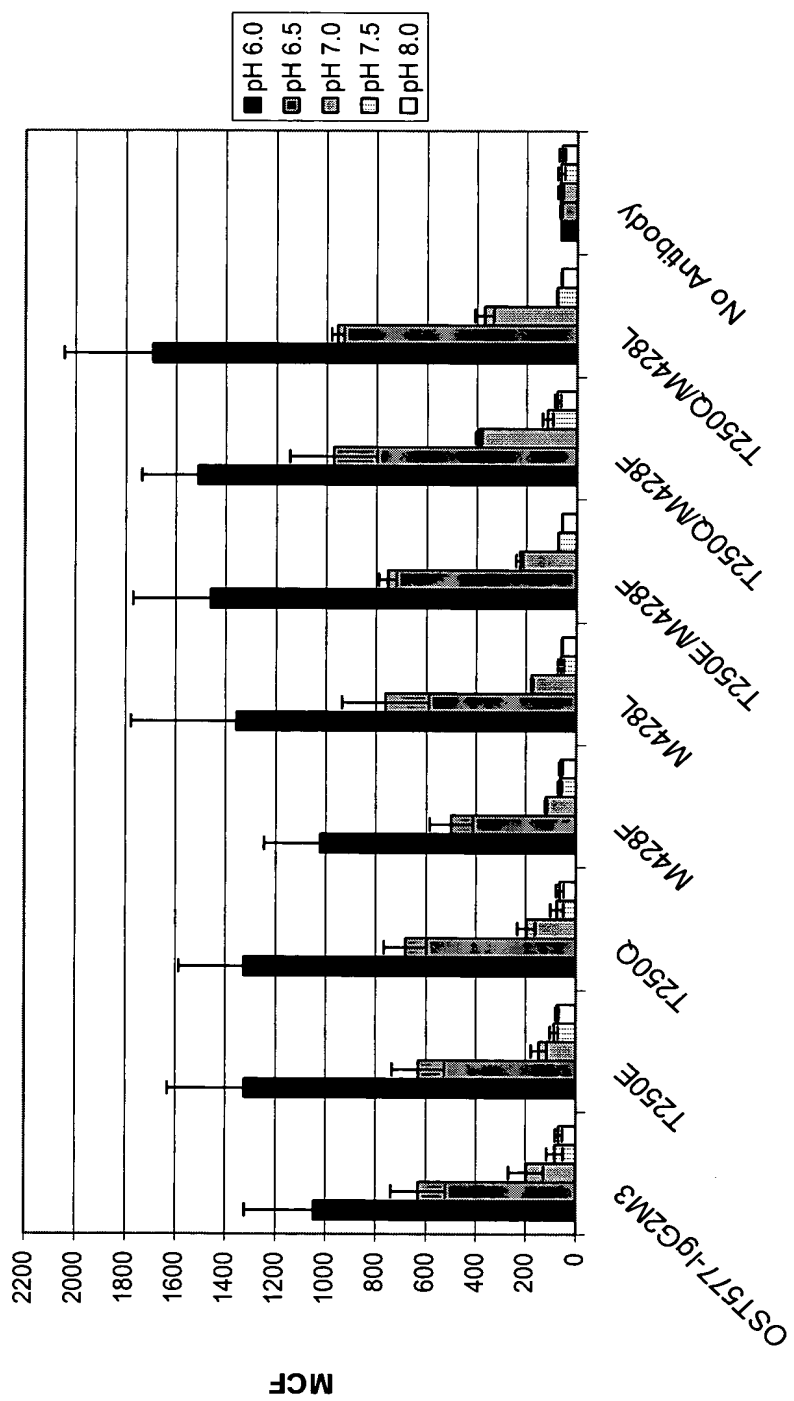


FIG. 15D



FIG. 15E

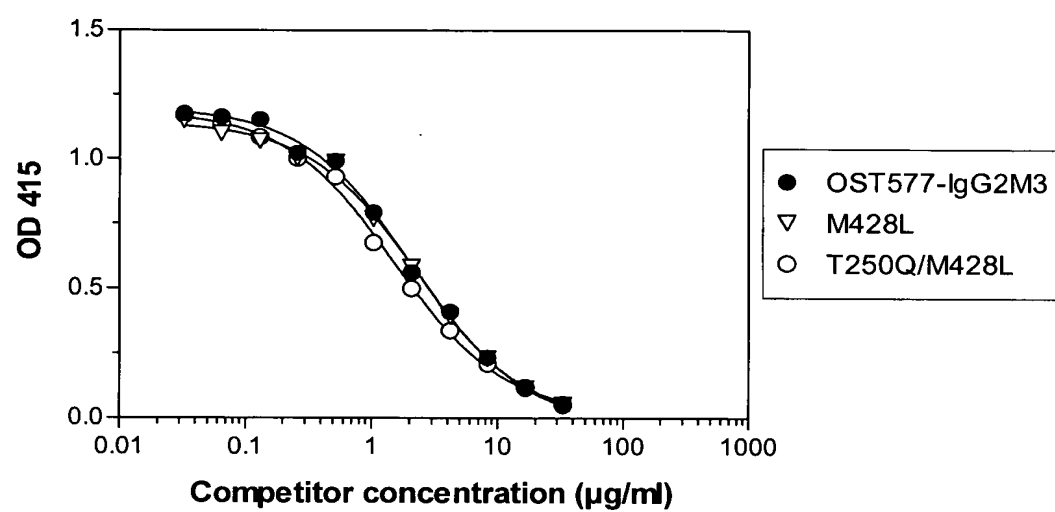


FIG. 16A

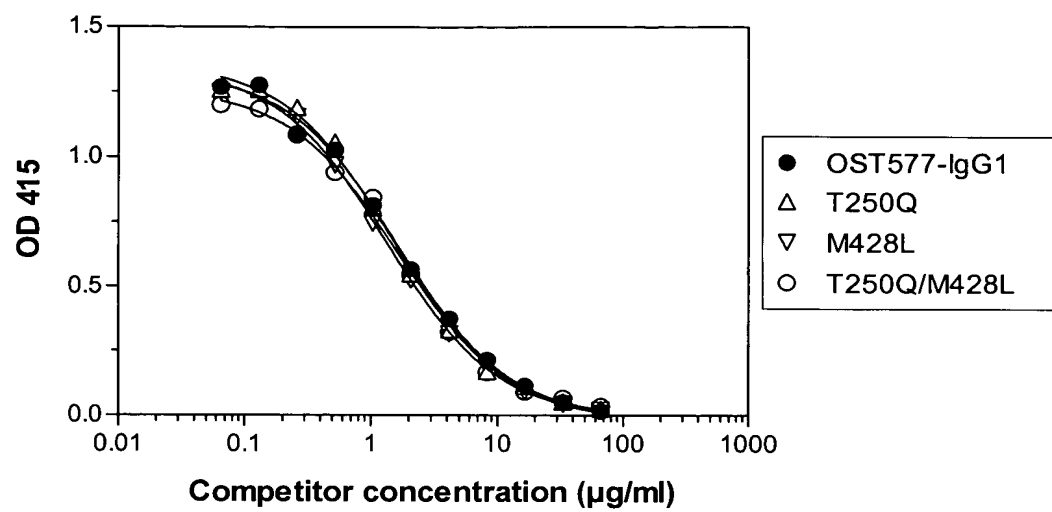


FIG. 16B

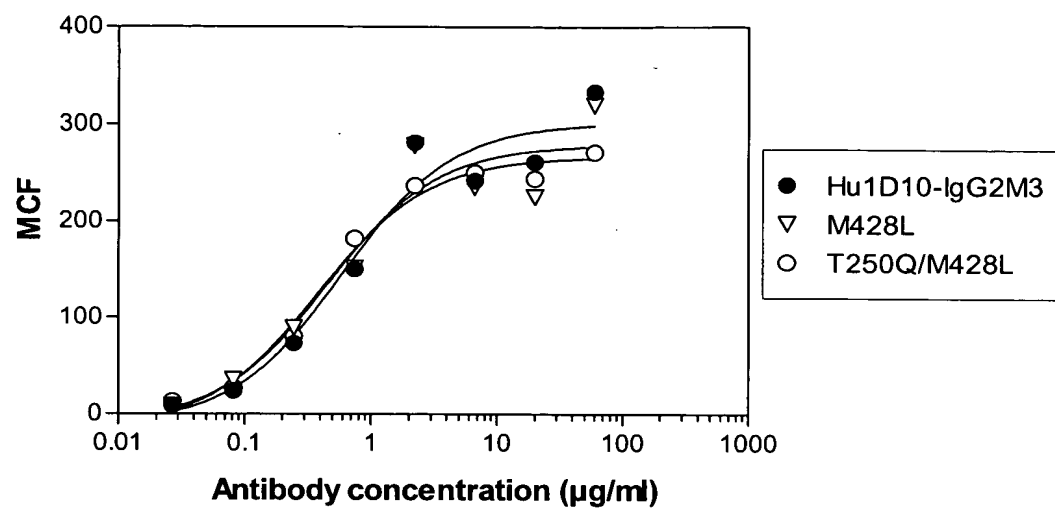


FIG. 17A

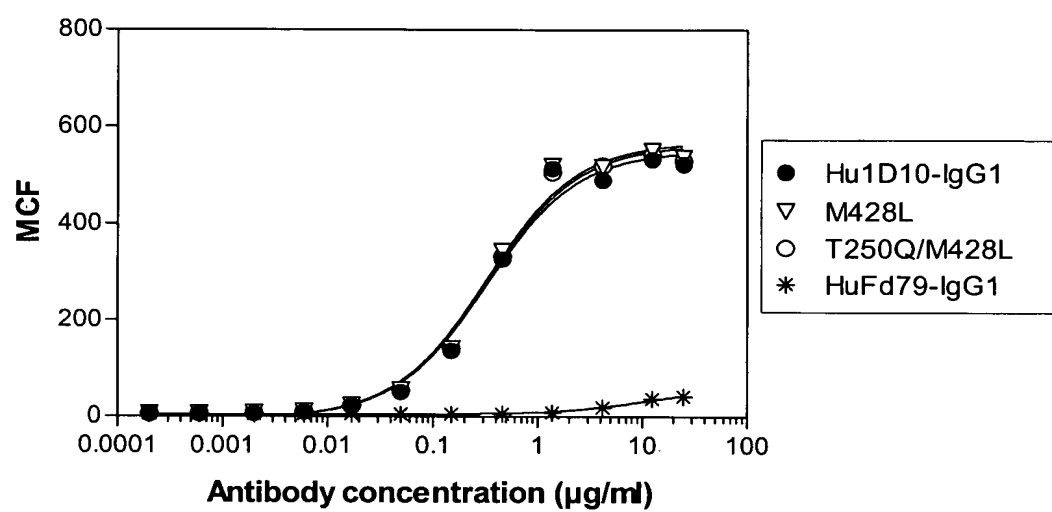


FIG. 17B

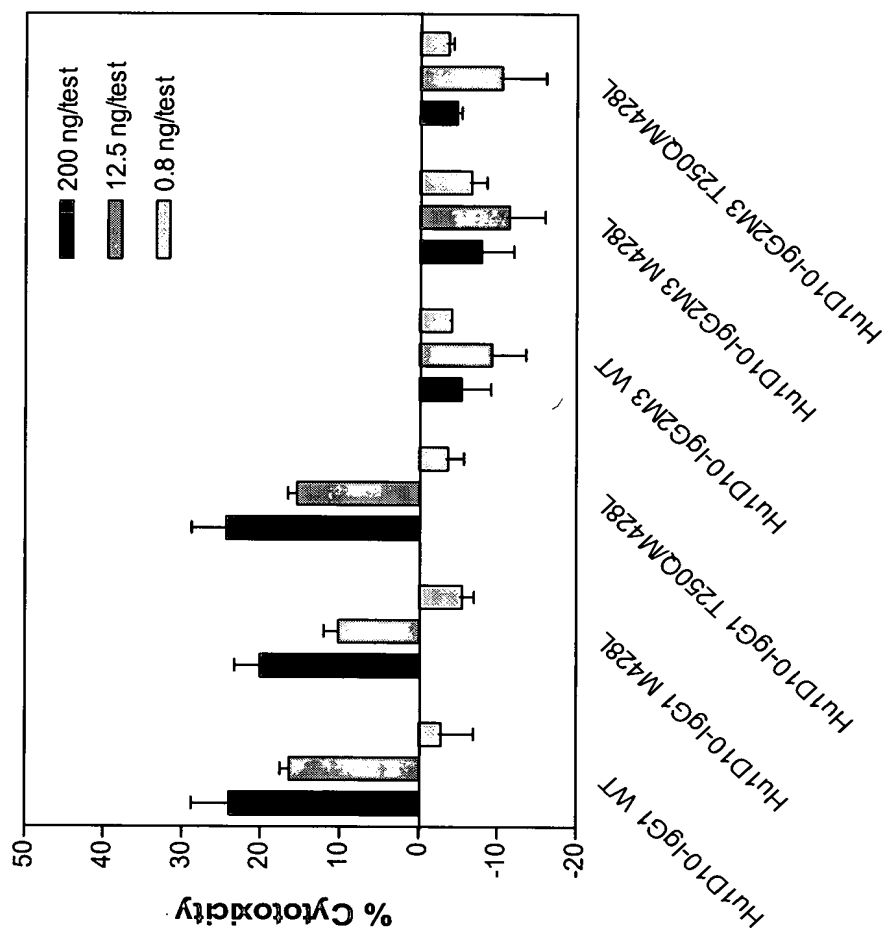


FIG. 18A

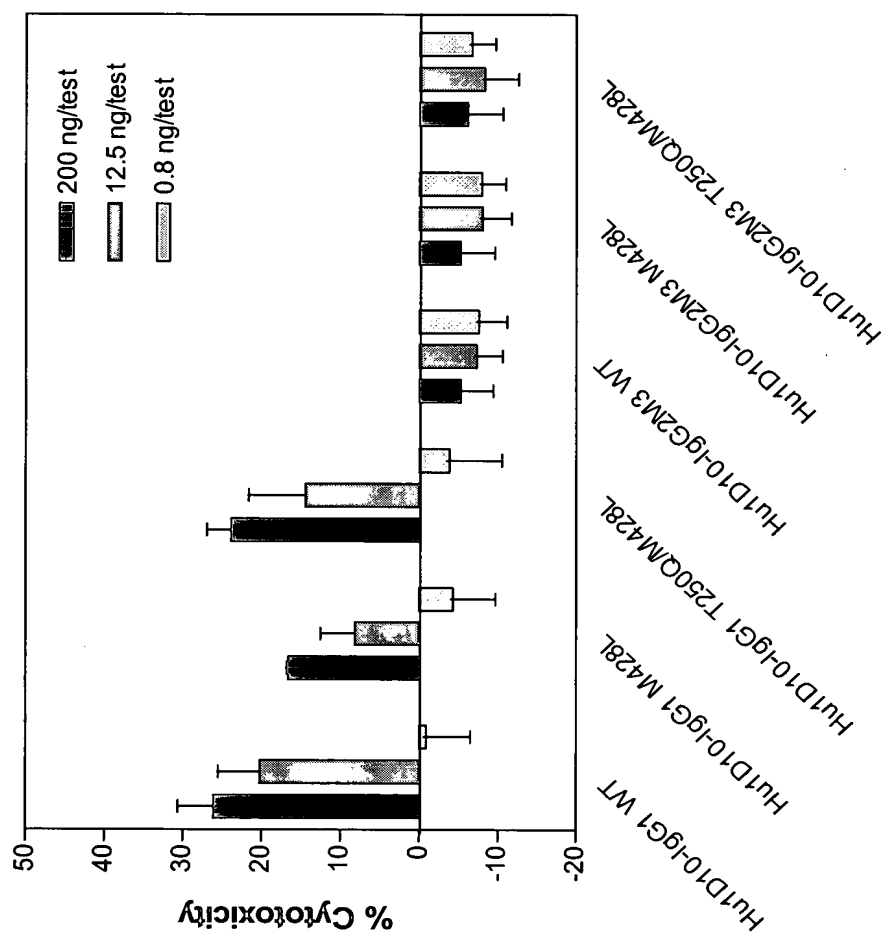


FIG. 18B

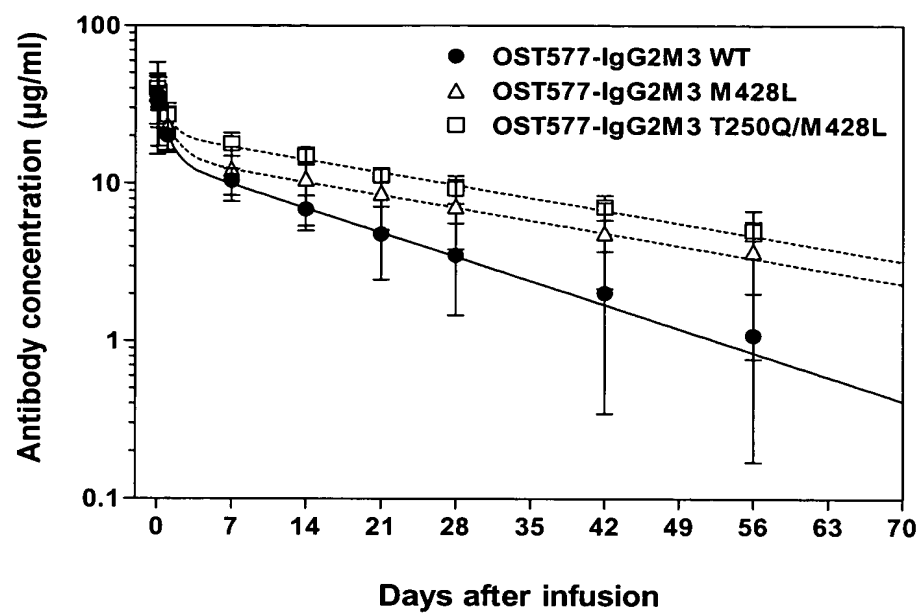


FIG. 19

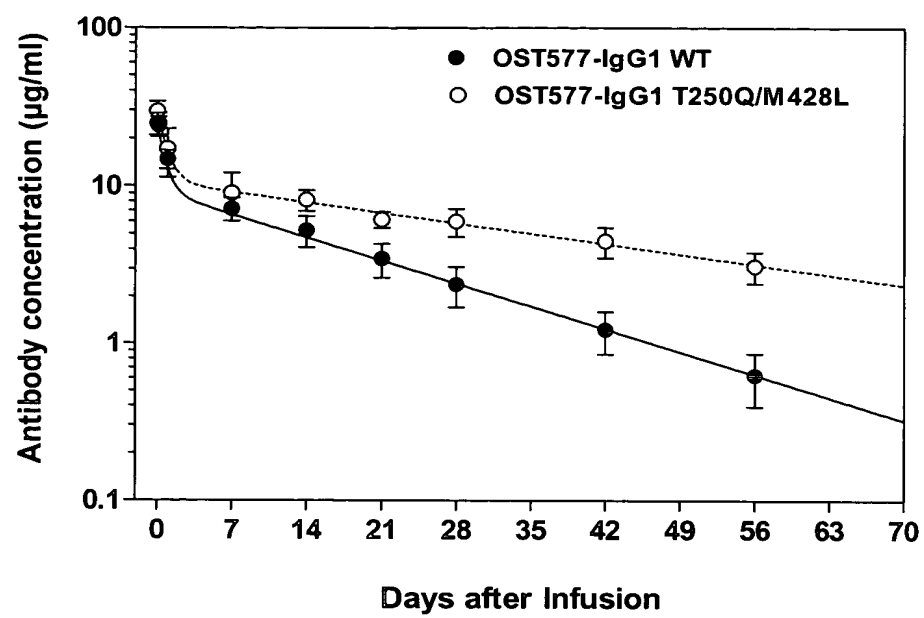


FIG. 20

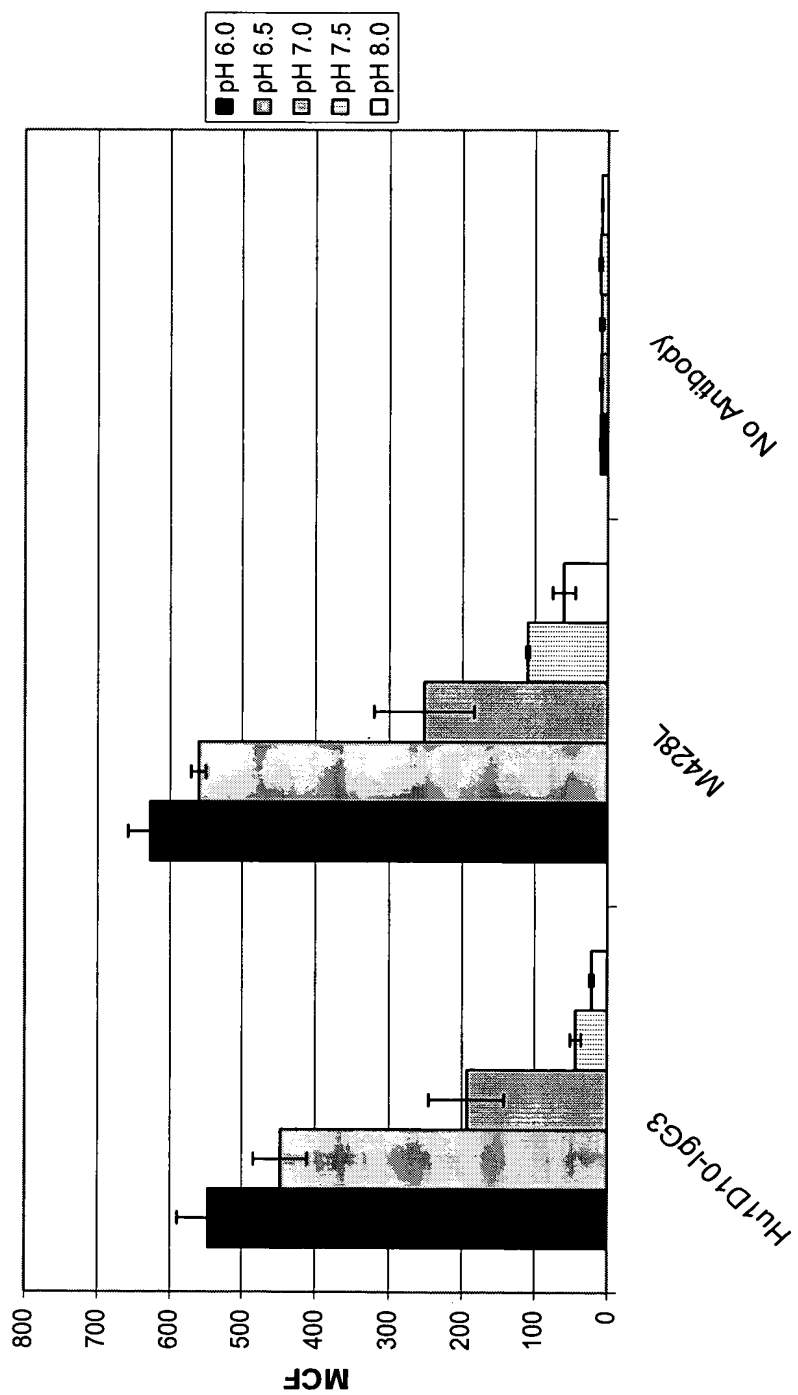


FIG. 21A



FIG. 21B

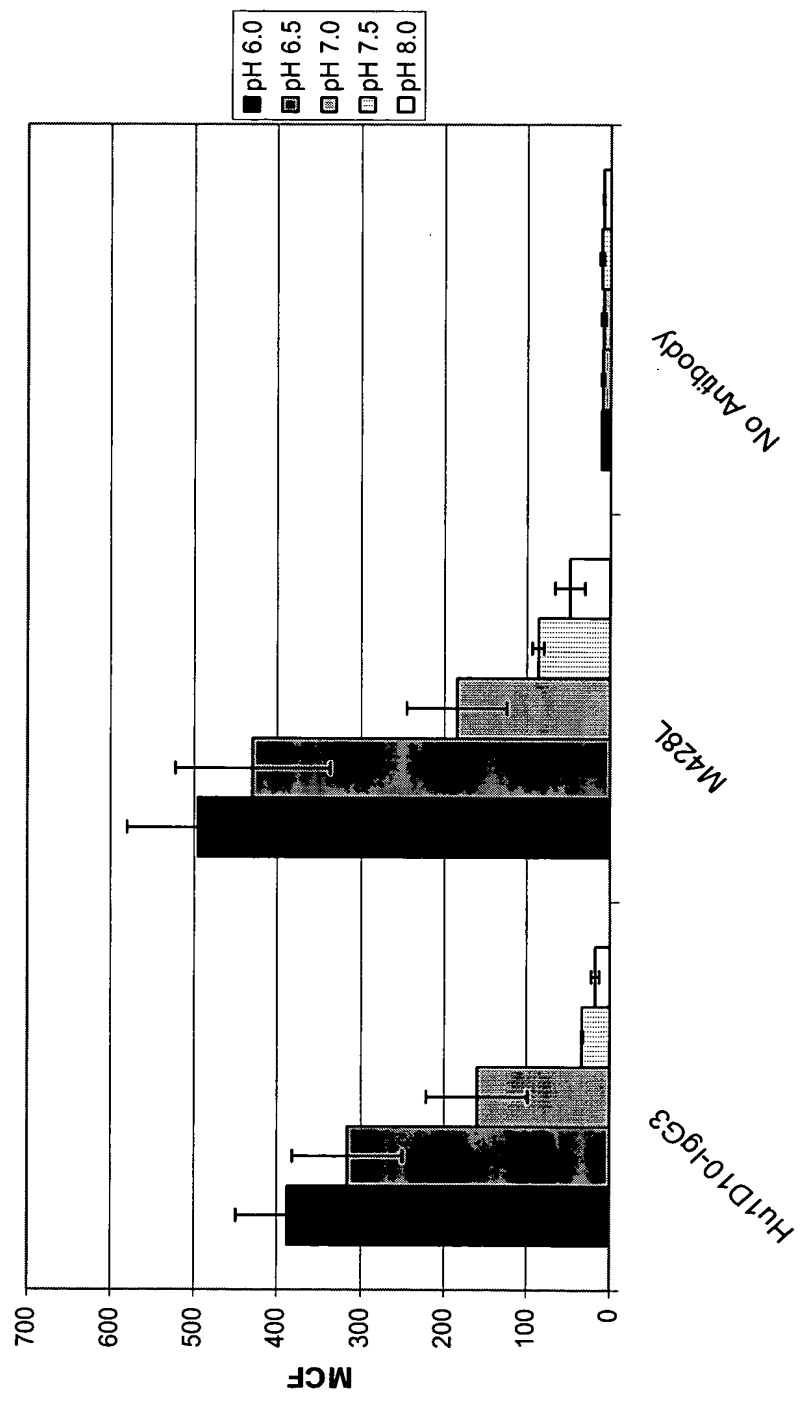


FIG. 21C

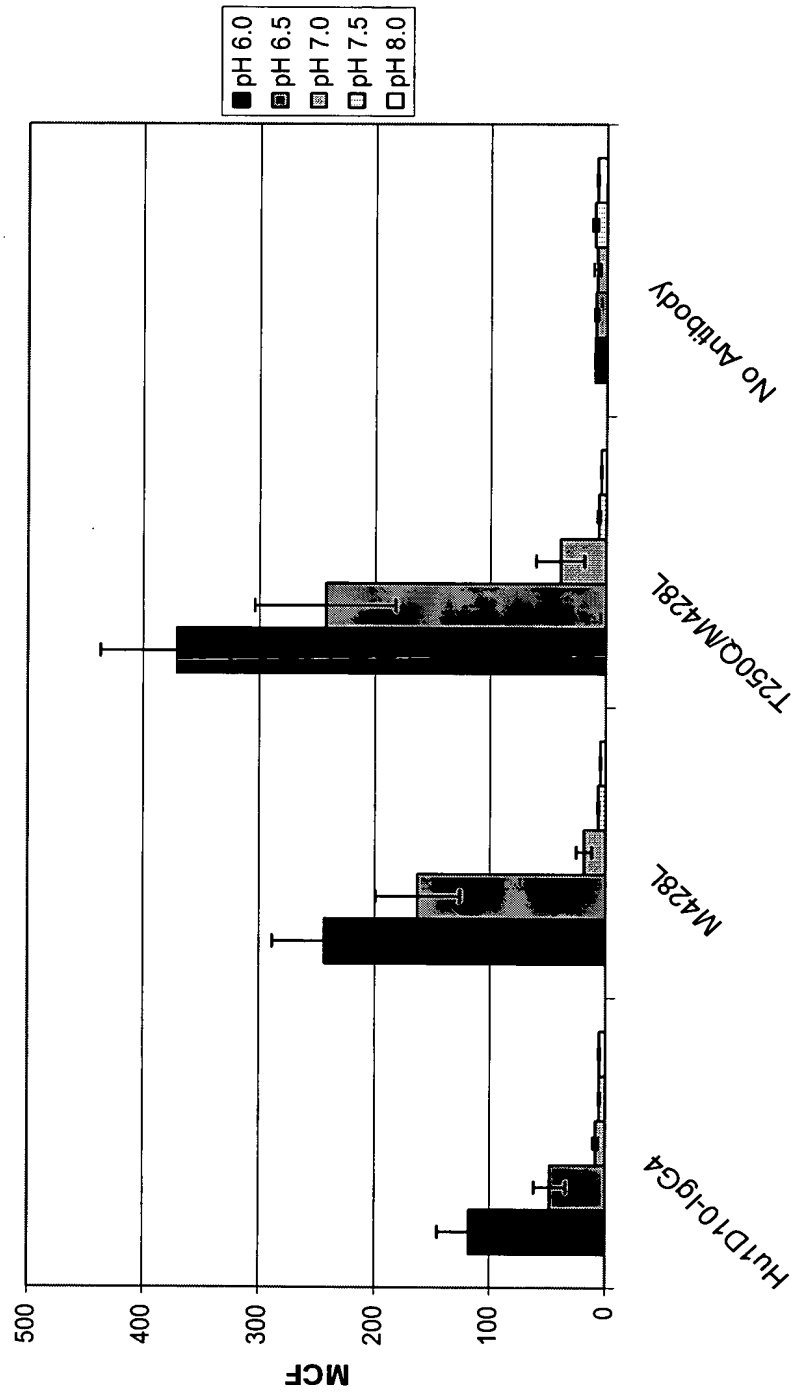


FIG. 21D

Daclizumab

Mature kappa light chain (SEQ ID NO:118)

DIQMTQSPSTLSASVGDRTITCSASSSISYMHYQKPKGKAPKLLIYTTSNLASGVPARFSGSGSGTEFTLTISLQPD
DDFATYYCHQRSTYPLTFGQGTKVEVKRTVAAPSVEIFPPSDEQLKSGTASVCLLNIFYPREAKVQWKVDNALQSGNS
QESVTEQDSKSTYSLSTLTLSKADYEKHKVYACEVTHQGLSPVTKSFNRGEC

Mature gamma-1 heavy chain with T250D (SEQ ID NO:119)

QVQLVQSGAEVKKPGSSVKVCSKASGYTFTSYRMHWVRQAPGQGLEWIGYINPSTGYTEYNQKFKDKATITADESTNTA
YMESSLRSEDVAVYYCARGGGVFDYWGQGTTLVTVSSASTKGPSVFPLAPSSKSTSGGTAALGCLVKDYFPEPVTVSWN
SGALTSGVHTFPAVLQSSGLYSLSSVVTVPSSSLGTQTYICNVNHKPSNTKVDKKVEPKSCDKTHTCPPCPAPELLGGP
SVFLFPPKPKDQLMISRTPEVTCVVVDVSHEDPEVKFNWYVDGVEVHNAKTKPREEQYNSTYRVVSVLTVLHQDWLNGK
EYCKKVSNAKALPAPIEKTISKAKGQPREPQVYTLPPSRDELTKNQVSLTCLVKGFYPSDIAVEWESNGQPENNYKTTTP
VLDSGDSFFLYSKLTVDKSRWQQGNVFCSCVMHEALHNHYTQKSLSLSPGK

Mature gamma-1 heavy chain with T250Q (SEQ ID NO:120)

QVQLVQSGAEVKKPGSSVKVCSKASGYTFTSYRMHWVRQAPGQGLEWIGYINPSTGYTEYNQKFKDKATITADESTNTA
YMESSLRSEDVAVYYCARGGGVFDYWGQGTTLVTVSSASTKGPSVFPLAPSSKSTSGGTAALGCLVKDYFPEPVTVSWN
SGALTSGVHTFPAVLQSSGLYSLSSVVTVPSSSLGTQTYICNVNHKPSNTKVDKKVEPKSCDKTHTCPPCPAPELLGGP
SVFLFPPKPKDQLMISRTPEVTCVVVDVSHEDPEVKFNWYVDGVEVHNAKTKPREEQYNSTYRVVSVLTVLHQDWLNGK
EYCKKVSNAKALPAPIEKTISKAKGQPREPQVYTLPPSRDELTKNQVSLTCLVKGFYPSDIAVEWESNGQPENNYKTTTP
VLDSGDSFFLYSKLTVDKSRWQQGNVFCSCVMHEALHNHYTQKSLSLSPGK

Mature gamma-1 heavy chain with M428L (SEQ ID NO:121)

QVQLVQSGAEVKKPGSSVKVCSKASGYTFTSYRMHWVRQAPGQGLEWIGYINPSTGYTEYNQKFKDKATITADESTNTA
YMESSLRSEDVAVYYCARGGGVFDYWGQGTTLVTVSSASTKGPSVFPLAPSSKSTSGGTAALGCLVKDYFPEPVTVSWN
SGALTSGVHTFPAVLQSSGLYSLSSVVTVPSSSLGTQTYICNVNHKPSNTKVDKKVEPKSCDKTHTCPPCPAPELLGGP
SVFLFPPKPKDQLMISRTPEVTCVVVDVSHEDPEVKFNWYVDGVEVHNAKTKPREEQYNSTYRVVSVLTVLHQDWLNGK
EYCKKVSNAKALPAPIEKTISKAKGQPREPQVYTLPPSRDELTKNQVSLTCLVKGFYPSDIAVEWESNGQPENNYKTTTP
VLDSGDSFFLYSKLTVDKSRWQQGNVFCSVLHEALHNHYTQKSLSLSPGK

Mature gamma-1 heavy chain with T250Q/M428L (SEQ ID NO:122)

QVQLVQSGAEVKKPGSSVKVCSKASGYTFTSYRMHWVRQAPGQGLEWIGYINPSTGYTEYNQKFKDKATITADESTNTA
YMESSLRSEDVAVYYCARGGGVFDYWGQGTTLVTVSSASTKGPSVFPLAPSSKSTSGGTAALGCLVKDYFPEPVTVSWN
SGALTSGVHTFPAVLQSSGLYSLSSVVTVPSSSLGTQTYICNVNHKPSNTKVDKKVEPKSCDKTHTCPPCPAPELLGGP
SVFLFPPKPKDQLMISRTPEVTCVVVDVSHEDPEVKFNWYVDGVEVHNAKTKPREEQYNSTYRVVSVLTVLHQDWLNGK
EYCKKVSNAKALPAPIEKTISKAKGQPREPQVYTLPPSRDELTKNQVSLTCLVKGFYPSDIAVEWESNGQPENNYKTTTP
VLDSGDSFFLYSKLTVDKSRWQQGNVFCSVLHEALHNHYTQKSLSLSPGK

Mature gamma-1 heavy chain with T250Q/M428F (SEQ ID NO:123)

QVQLVQSGAEVKKPGSSVKVCSKASGYTFTSYRMHWVRQAPGQGLEWIGYINPSTGYTEYNQKFKDKATITADESTNTA
YMESSLRSEDVAVYYCARGGGVFDYWGQGTTLVTVSSASTKGPSVFPLAPSSKSTSGGTAALGCLVKDYFPEPVTVSWN
SGALTSGVHTFPAVLQSSGLYSLSSVVTVPSSSLGTQTYICNVNHKPSNTKVDKKVEPKSCDKTHTCPPCPAPELLGGP
SVFLFPPKPKDQLMISRTPEVTCVVVDVSHEDPEVKFNWYVDGVEVHNAKTKPREEQYNSTYRVVSVLTVLHQDWLNGK
EYCKKVSNAKALPAPIEKTISKAKGQPREPQVYTLPPSRDELTKNQVSLTCLVKGFYPSDIAVEWESNGQPENNYKTTTP
VLDSGDSFFLYSKLTVDKSRWQQGNVFCSVFHEALHNHYTQKSLSLSPGK

Fig. 22

Daclizumab (continued)

Mature gamma-2M3 heavy chain with T250D (SEQ ID NO:124)

QVQLVQSGAEVKKPGSSVKVSKASGYTFTSYRMHWVRQAPGQGLEWIGYINPSTGYTEYNQKFKDKATITADESTNTA
YMEISSLRSEDTAVYYCARGGGVFDYWGQGTLLTVSSASTKGPSVFPLAPCSRSTSESTAALGCLVKDYFPEPVTVSWN
SGALTSGVHTFPAVLQSSGLYSLSSVTVPSNFGTQTYTCNVDHKPSNTKVDKTVERKCCVECPPCPAPPAAAPSVFL
FPPKPKD~~Q~~LMISRTPEVTCVVVDVSHEDPEVQFNWYVDGVEVHNAKTKPREEQFNSTFRVSVLTVVHQDWLNGKEYKC
KVSNGKLPAPIEKTISKTKGQPREPQVYTLPPSREEMTKNQVSLTCLVKGFYPSDIAVEWESNGQPENNYKTTPMLDS
DGSFFLYSKLTVDKSRWQQGNVFCSCVMHEALHNHYTQKSLSLSPGK

Mature gamma-2M3 heavy chain with T250Q (SEQ ID NO:125)

QVQLVQSGAEVKKPGSSVKVSKASGYTFTSYRMHWVRQAPGQGLEWIGYINPSTGYTEYNQKFKDKATITADESTNTA
YMEISSLRSEDTAVYYCARGGGVFDYWGQGTLLTVSSASTKGPSVFPLAPCSRSTSESTAALGCLVKDYFPEPVTVSWN
SGALTSGVHTFPAVLQSSGLYSLSSVTVPSNFGTQTYTCNVDHKPSNTKVDKTVERKCCVECPPCPAPPAAAPSVFL
FPPKPKD~~Q~~LMISRTPEVTCVVVDVSHEDPEVQFNWYVDGVEVHNAKTKPREEQFNSTFRVSVLTVVHQDWLNGKEYKC
KVSNGKLPAPIEKTISKTKGQPREPQVYTLPPSREEMTKNQVSLTCLVKGFYPSDIAVEWESNGQPENNYKTTPMLDS
DGSFFLYSKLTVDKSRWQQGNVFCSCVMHEALHNHYTQKSLSLSPGK

Mature gamma-2M3 heavy chain with M428L (SEQ ID NO:126)

QVQLVQSGAEVKKPGSSVKVSKASGYTFTSYRMHWVRQAPGQGLEWIGYINPSTGYTEYNQKFKDKATITADESTNTA
YMEISSLRSEDTAVYYCARGGGVFDYWGQGTLLTVSSASTKGPSVFPLAPCSRSTSESTAALGCLVKDYFPEPVTVSWN
SGALTSGVHTFPAVLQSSGLYSLSSVTVPSNFGTQTYTCNVDHKPSNTKVDKTVERKCCVECPPCPAPPAAAPSVFL
FPPKPKD~~Q~~LMISRTPEVTCVVVDVSHEDPEVQFNWYVDGVEVHNAKTKPREEQFNSTFRVSVLTVVHQDWLNGKEYKC
KVSNGKLPAPIEKTISKTKGQPREPQVYTLPPSREEMTKNQVSLTCLVKGFYPSDIAVEWESNGQPENNYKTTPMLDS
DGSFFLYSKLTVDKSRWQQGNVFCSCVLHEALHNHYTQKSLSLSPGK

Mature gamma-2M3 heavy chain with T250Q/M428L (SEQ ID NO:127)

QVQLVQSGAEVKKPGSSVKVSKASGYTFTSYRMHWVRQAPGQGLEWIGYINPSTGYTEYNQKFKDKATITADESTNTA
YMEISSLRSEDTAVYYCARGGGVFDYWGQGTLLTVSSASTKGPSVFPLAPCSRSTSESTAALGCLVKDYFPEPVTVSWN
SGALTSGVHTFPAVLQSSGLYSLSSVTVPSNFGTQTYTCNVDHKPSNTKVDKTVERKCCVECPPCPAPPAAAPSVFL
FPPKPKD~~Q~~LMISRTPEVTCVVVDVSHEDPEVQFNWYVDGVEVHNAKTKPREEQFNSTFRVSVLTVVHQDWLNGKEYKC
KVSNGKLPAPIEKTISKTKGQPREPQVYTLPPSREEMTKNQVSLTCLVKGFYPSDIAVEWESNGQPENNYKTTPMLDS
DGSFFLYSKLTVDKSRWQQGNVFCSCVLHEALHNHYTQKSLSLSPGK

Mature gamma-2M3 heavy chain with T250Q/M428F (SEQ ID NO:128)

QVQLVQSGAEVKKPGSSVKVSKASGYTFTSYRMHWVRQAPGQGLEWIGYINPSTGYTEYNQKFKDKATITADESTNTA
YMEISSLRSEDTAVYYCARGGGVFDYWGQGTLLTVSSASTKGPSVFPLAPCSRSTSESTAALGCLVKDYFPEPVTVSWN
SGALTSGVHTFPAVLQSSGLYSLSSVTVPSNFGTQTYTCNVDHKPSNTKVDKTVERKCCVECPPCPAPPAAAPSVFL
FPPKPKD~~Q~~LMISRTPEVTCVVVDVSHEDPEVQFNWYVDGVEVHNAKTKPREEQFNSTFRVSVLTVVHQDWLNGKEYKC
KVSNGKLPAPIEKTISKTKGQPREPQVYTLPPSREEMTKNQVSLTCLVKGFYPSDIAVEWESNGQPENNYKTTPMLDS
DGSFFLYSKLTVDKSRWQQGNVFCSCVFHEALHNHYTQKSLSLSPGK

Fig. 22 (cont.)

Fontolizumab (HuZAF[®])

Mature kappa light chain (SEQ ID NO:129)

DIQMTQSPSTLSASVGDRTITCKASENVDITYVSWYQQKPGKAPKLLIYGASNRYTGVPSRFSGSGSGTDFTLTISSLQ
PDDFATYYCGQSYNYPFTFGQGTKVEVKRTVAAPSVFIFPPSDEQLKSGTASVVCLLNNFYPREAKVQWKVDNALQSGN
SQESVTEQDSKDYSLSSSTLTLSKADYEKHKVYACEVTHQGLSSPVTKSFNRGEC

Mature gamma-1 heavy chain with T250D (SEQ ID NO:130)

QVQLVQSGAELKKPGSSVKVSKASGYIFTSSWINVVKQAPGQGLEWIGRIDPSDGEVHYNQDFKDKATLTVDKSTNTA
YMESSLRSEDTAVYYCARGFLPWFADWGQGTLLTVTVSSASTKGPSVFPLAPSSKSTSGGTAALGCLVKDYFPEPVTVSW
NSGALTSGVHTFPAVLQSSGLYSLSSVTVPSSSLGTQTYICNVNHKPSNTKVDKKVEPKSCDKTHTCPPCPAPELLGG
PSVFLFPPPKPKDQLMISRTPEVTCVVDVSHEDPEVKFNWYVDGVEVHNAKTKPREEQYNSTYRVVSVLTVLHQDWLNG
KEYKCKVSNKALPAPIEKTISKAKGQPREPQVYTLPPSRDELTKNQVSLTCLVKGFYPSDIAVEWESNGQPENNYKTTT
PVLDSGDSFFLYSKLTVDKSRWQQGNVFCFSVMHEALHNHYTQKSLSLSPGK

Mature gamma-1 heavy chain with T250Q (SEQ ID NO:131)

QVQLVQSGAELKKPGSSVKVSKASGYIFTSSWINVVKQAPGQGLEWIGRIDPSDGEVHYNQDFKDKATLTVDKSTNTA
YMESSLRSEDTAVYYCARGFLPWFADWGQGTLLTVTVSSASTKGPSVFPLAPSSKSTSGGTAALGCLVKDYFPEPVTVSW
NSGALTSGVHTFPAVLQSSGLYSLSSVTVPSSSLGTQTYICNVNHKPSNTKVDKKVEPKSCDKTHTCPPCPAPELLGG
PSVFLFPPPKPKDQLMISRTPEVTCVVDVSHEDPEVKFNWYVDGVEVHNAKTKPREEQYNSTYRVVSVLTVLHQDWLNG
KEYKCKVSNKALPAPIEKTISKAKGQPREPQVYTLPPSRDELTKNQVSLTCLVKGFYPSDIAVEWESNGQPENNYKTTT
PVLDSGDSFFLYSKLTVDKSRWQQGNVFCFSVMHEALHNHYTQKSLSLSPGK

Mature gamma-1 heavy chain with M428L (SEQ ID NO:132)

QVQLVQSGAELKKPGSSVKVSKASGYIFTSSWINVVKQAPGQGLEWIGRIDPSDGEVHYNQDFKDKATLTVDKSTNTA
YMESSLRSEDTAVYYCARGFLPWFADWGQGTLLTVTVSSASTKGPSVFPLAPSSKSTSGGTAALGCLVKDYFPEPVTVSW
NSGALTSGVHTFPAVLQSSGLYSLSSVTVPSSSLGTQTYICNVNHKPSNTKVDKKVEPKSCDKTHTCPPCPAPELLGG
PSVFLFPPPKPKDQLMISRTPEVTCVVDVSHEDPEVKFNWYVDGVEVHNAKTKPREEQYNSTYRVVSVLTVLHQDWLNG
KEYKCKVSNKALPAPIEKTISKAKGQPREPQVYTLPPSRDELTKNQVSLTCLVKGFYPSDIAVEWESNGQPENNYKTTT
PVLDSGDSFFLYSKLTVDKSRWQQGNVFCFSVMHEALHNHYTQKSLSLSPGK

Mature gamma-1 heavy chain with T250Q/M428L (SEQ ID NO:133)

QVQLVQSGAELKKPGSSVKVSKASGYIFTSSWINVVKQAPGQGLEWIGRIDPSDGEVHYNQDFKDKATLTVDKSTNTA
YMESSLRSEDTAVYYCARGFLPWFADWGQGTLLTVTVSSASTKGPSVFPLAPSSKSTSGGTAALGCLVKDYFPEPVTVSW
NSGALTSGVHTFPAVLQSSGLYSLSSVTVPSSSLGTQTYICNVNHKPSNTKVDKKVEPKSCDKTHTCPPCPAPELLGG
PSVFLFPPPKPKDQLMISRTPEVTCVVDVSHEDPEVKFNWYVDGVEVHNAKTKPREEQYNSTYRVVSVLTVLHQDWLNG
KEYKCKVSNKALPAPIEKTISKAKGQPREPQVYTLPPSRDELTKNQVSLTCLVKGFYPSDIAVEWESNGQPENNYKTTT
PVLDSGDSFFLYSKLTVDKSRWQQGNVFCFSVMHEALHNHYTQKSLSLSPGK

Mature gamma-1 heavy chain with T250Q/M428F (SEQ ID NO:134)

QVQLVQSGAELKKPGSSVKVSKASGYIFTSSWINVVKQAPGQGLEWIGRIDPSDGEVHYNQDFKDKATLTVDKSTNTA
YMESSLRSEDTAVYYCARGFLPWFADWGQGTLLTVTVSSASTKGPSVFPLAPSSKSTSGGTAALGCLVKDYFPEPVTVSW
NSGALTSGVHTFPAVLQSSGLYSLSSVTVPSSSLGTQTYICNVNHKPSNTKVDKKVEPKSCDKTHTCPPCPAPELLGG
PSVFLFPPPKPKDQLMISRTPEVTCVVDVSHEDPEVKFNWYVDGVEVHNAKTKPREEQYNSTYRVVSVLTVLHQDWLNG
KEYKCKVSNKALPAPIEKTISKAKGQPREPQVYTLPPSRDELTKNQVSLTCLVKGFYPSDIAVEWESNGQPENNYKTTT
PVLDSGDSFFLYSKLTVDKSRWQQGNVFCFSVMHEALHNHYTQKSLSLSPGK

Fig. 23

Visilizumab (Nuvion®)

Mature kappa light chain (SEQ ID NO:135)

DIQMTQSPSSLSASVGRVTITCSASSSVSYMNWYQQKPGKAPKRLIYDTSKLGASGVPSRFSGSGSGTDFTLTISLQPE
EDFATYYCQQWSSNPPTFGGGTKVEIKRTVAAPSVFIFPPSDEQLKSGTASVVCLLNNFYPREAKVQWKVDNALQSGNS
QESVTEQDSKDSSTYLSSTLTLSKADYEKHKVYACEVTHQGLSSPVTKSFNRGEC

Mature gamma-2M3 heavy chain with T250D (SEQ ID NO:136)

QVQLVQSGAEVKKPGASVKVSCKASGYTFISYTMHWVRQAPGQGLEWMGYINPRSGYTHYNQKLKDKATLTADKSASTA
YMEISSLRSEDTAVYYCARSAYDYDGFAYWGQGLTVTVSSASTKGPSVFPLAPCSRSTSESTAALGCLVKDYFPEPVT
VSWNSGALTSGVHTFPAVLQSSGLYSLSSVTVPSNFGTQTYTCNVDHKPSNTKVDKTVKCCVECPPCPAPPAAAP
SVFLFPPKPKDQLMISRTPEVTCVVVDVSHEDPEVQFNWYVDGVEVHNAKTKPREEQFNSTFRVVSVLTVVHQDWLNGK
EYKCKVSNKGLPAPIEKTISKTKGQPREPQVYTLPPSREEMTKNQVSLTCLVKGFYPSDIAVEWESNGQPENNYKTTTP
MLDSDGSFFLYSKLTVDKSRWQQGNVFCSCVMHEALHNHYTQKSLSLSPSK

Mature gamma-2M3 heavy chain with T250Q (SEQ ID NO:137)

QVQLVQSGAEVKKPGASVKVSCKASGYTFISYTMHWVRQAPGQGLEWMGYINPRSGYTHYNQKLKDKATLTADKSASTA
YMEISSLRSEDTAVYYCARSAYDYDGFAYWGQGLTVTVSSASTKGPSVFPLAPCSRSTSESTAALGCLVKDYFPEPVT
VSWNSGALTSGVHTFPAVLQSSGLYSLSSVTVPSNFGTQTYTCNVDHKPSNTKVDKTVKCCVECPPCPAPPAAAP
SVFLFPPKPKDQLMISRTPEVTCVVVDVSHEDPEVQFNWYVDGVEVHNAKTKPREEQFNSTFRVVSVLTVVHQDWLNGK
EYKCKVSNKGLPAPIEKTISKTKGQPREPQVYTLPPSREEMTKNQVSLTCLVKGFYPSDIAVEWESNGQPENNYKTTTP
MLDSDGSFFLYSKLTVDKSRWQQGNVFCSCVMHEALHNHYTQKSLSLSPSK

Mature gamma-2M3 heavy chain with M428L (SEQ ID NO:138)

QVQLVQSGAEVKKPGASVKVSCKASGYTFISYTMHWVRQAPGQGLEWMGYINPRSGYTHYNQKLKDKATLTADKSASTA
YMEISSLRSEDTAVYYCARSAYDYDGFAYWGQGLTVTVSSASTKGPSVFPLAPCSRSTSESTAALGCLVKDYFPEPVT
VSWNSGALTSGVHTFPAVLQSSGLYSLSSVTVPSNFGTQTYTCNVDHKPSNTKVDKTVKCCVECPPCPAPPAAAP
SVFLFPPKPKDQLMISRTPEVTCVVVDVSHEDPEVQFNWYVDGVEVHNAKTKPREEQFNSTFRVVSVLTVVHQDWLNGK
EYKCKVSNKGLPAPIEKTISKTKGQPREPQVYTLPPSREEMTKNQVSLTCLVKGFYPSDIAVEWESNGQPENNYKTTTP
MLDSDGSFFLYSKLTVDKSRWQQGNVFCSCVLHEALHNHYTQKSLSLSPSK

Mature gamma-2M3 heavy chain with T250Q/M428L (SEQ ID NO:139)

QVQLVQSGAEVKKPGASVKVSCKASGYTFISYTMHWVRQAPGQGLEWMGYINPRSGYTHYNQKLKDKATLTADKSASTA
YMEISSLRSEDTAVYYCARSAYDYDGFAYWGQGLTVTVSSASTKGPSVFPLAPCSRSTSESTAALGCLVKDYFPEPVT
VSWNSGALTSGVHTFPAVLQSSGLYSLSSVTVPSNFGTQTYTCNVDHKPSNTKVDKTVKCCVECPPCPAPPAAAP
SVFLFPPKPKDQLMISRTPEVTCVVVDVSHEDPEVQFNWYVDGVEVHNAKTKPREEQFNSTFRVVSVLTVVHQDWLNGK
EYKCKVSNKGLPAPIEKTISKTKGQPREPQVYTLPPSREEMTKNQVSLTCLVKGFYPSDIAVEWESNGQPENNYKTTTP
MLDSDGSFFLYSKLTVDKSRWQQGNVFCSCVLHEALHNHYTQKSLSLSPSK

Mature gamma-2M3 heavy chain with T250Q/M428F (SEQ ID NO:140)

QVQLVQSGAEVKKPGASVKVSCKASGYTFISYTMHWVRQAPGQGLEWMGYINPRSGYTHYNQKLKDKATLTADKSASTA
YMEISSLRSEDTAVYYCARSAYDYDGFAYWGQGLTVTVSSASTKGPSVFPLAPCSRSTSESTAALGCLVKDYFPEPVT
VSWNSGALTSGVHTFPAVLQSSGLYSLSSVTVPSNFGTQTYTCNVDHKPSNTKVDKTVKCCVECPPCPAPPAAAP
SVFLFPPKPKDQLMISRTPEVTCVVVDVSHEDPEVQFNWYVDGVEVHNAKTKPREEQFNSTFRVVSVLTVVHQDWLNGK
EYKCKVSNKGLPAPIEKTISKTKGQPREPQVYTLPPSREEMTKNQVSLTCLVKGFYPSDIAVEWESNGQPENNYKTTTP
MLDSDGSFFLYSKLTVDKSRWQQGNVFCSCVHEALHNHYTQKSLSLSPSK

Fig. 24

M200

Mature kappa light chain (SEQ ID NO:141)

QIVLTQSPAIMASASLGERVTMTCTASSSVSSNYLHWYQQKPGSAPNLWIYSTNLASGVPARFSGSGSGTSYSLTISSM
EAEDAATYYCHQYLRSPPTFGGGTKLEIKRTVAAPSVFIFPPSDEQLKSGTASVVCLLNNFYPREAKVQWKVDNALQSG
NSQESVTEQDSKDYSLSSITLTLSKADYEKHKVYACEVTHQGLSSPVTKSFNRGEC

Mature gamma-4 heavy chain with T250D (SEQ ID NO:142)

QVQLKESGPGLVAPSQSLITCTISGFSLTDYGVHWVRQPPGKGLEWLVVIWSDGSSTYNSALKSRMTIRKDNSKSQVF
LIMNSLQTDSDAMYYCARHGTYYGMTTGGDALDYWGQGTSTVTVSSASTKGPSVFPLAPCSRSTSESTAALGCLVKDYFP
EPVTVSWNSGALTSGVHTFPAVLQSSGLYSLSSVTVPSSSLGKTYTCNVDHKPSNTKVDKRVESKYGPPCPSCPAPE
FLGGPSVFLFPPKPKD~~DL~~MI SRTPEVTCVVVDVSQEDPEVQFNWYVDGVEVHNAKTKPREEQFNSTYRVVSVLTVLHQD
WLNKEYKCKVSNKGLPSSIEKTI SAKAGQPREPQVYTLPPSQEEMTKNQVSLTCLVKGFYPSDIAVEWESNGQPENNY
KTTTPVLDSDGSFFLYSRLTVDKSRWQEGNVFSCSVMEALHNHYTQKSLSLSLGK

Mature gamma-4 heavy chain with T250Q (SEQ ID NO:143)

QVQLKESGPGLVAPSQSLITCTISGFSLTDYGVHWVRQPPGKGLEWLVVIWSDGSSTYNSALKSRMTIRKDNSKSQVF
LIMNSLQTDSDAMYYCARHGTYYGMTTGGDALDYWGQGTSTVTVSSASTKGPSVFPLAPCSRSTSESTAALGCLVKDYFP
EPVTVSWNSGALTSGVHTFPAVLQSSGLYSLSSVTVPSSSLGKTYTCNVDHKPSNTKVDKRVESKYGPPCPSCPAPE
FLGGPSVFLFPPKPKD~~QL~~MI SRTPEVTCVVVDVSQEDPEVQFNWYVDGVEVHNAKTKPREEQFNSTYRVVSVLTVLHQD
WLNKEYKCKVSNKGLPSSIEKTI SAKAGQPREPQVYTLPPSQEEMTKNQVSLTCLVKGFYPSDIAVEWESNGQPENNY
KTTTPVLDSDGSFFLYSRLTVDKSRWQEGNVFSCSVMEALHNHYTQKSLSLSLGK

Mature gamma-4 heavy chain with M428L (SEQ ID NO:144)

QVQLKESGPGLVAPSQSLITCTISGFSLTDYGVHWVRQPPGKGLEWLVVIWSDGSSTYNSALKSRMTIRKDNSKSQVF
LIMNSLQTDSDAMYYCARHGTYYGMTTGGDALDYWGQGTSTVTVSSASTKGPSVFPLAPCSRSTSESTAALGCLVKDYFP
EPVTVSWNSGALTSGVHTFPAVLQSSGLYSLSSVTVPSSSLGKTYTCNVDHKPSNTKVDKRVESKYGPPCPSCPAPE
FLGGPSVFLFPPKPKD~~TL~~MI SRTPEVTCVVVDVSQEDPEVQFNWYVDGVEVHNAKTKPREEQFNSTYRVVSVLTVLHQD
WLNKEYKCKVSNKGLPSSIEKTI SAKAGQPREPQVYTLPPSQEEMTKNQVSLTCLVKGFYPSDIAVEWESNGQPENNY
KTTTPVLDSDGSFFLYSRLTVDKSRWQEGNVFSCSVLHEALHNHYTQKSLSLSLGK

Mature gamma-4 heavy chain with T250Q/M428L (SEQ ID NO:145)

QVQLKESGPGLVAPSQSLITCTISGFSLTDYGVHWVRQPPGKGLEWLVVIWSDGSSTYNSALKSRMTIRKDNSKSQVF
LIMNSLQTDSDAMYYCARHGTYYGMTTGGDALDYWGQGTSTVTVSSASTKGPSVFPLAPCSRSTSESTAALGCLVKDYFP
EPVTVSWNSGALTSGVHTFPAVLQSSGLYSLSSVTVPSSSLGKTYTCNVDHKPSNTKVDKRVESKYGPPCPSCPAPE
FLGGPSVFLFPPKPKD~~QL~~MI SRTPEVTCVVVDVSQEDPEVQFNWYVDGVEVHNAKTKPREEQFNSTYRVVSVLTVLHQD
WLNKEYKCKVSNKGLPSSIEKTI SAKAGQPREPQVYTLPPSQEEMTKNQVSLTCLVKGFYPSDIAVEWESNGQPENNY
KTTTPVLDSDGSFFLYSRLTVDKSRWQEGNVFSCSVLHEALHNHYTQKSLSLSLGK

Mature gamma-4 heavy chain with T250Q/M428F (SEQ ID NO:146)

QVQLKESGPGLVAPSQSLITCTISGFSLTDYGVHWVRQPPGKGLEWLVVIWSDGSSTYNSALKSRMTIRKDNSKSQVF
LIMNSLQTDSDAMYYCARHGTYYGMTTGGDALDYWGQGTSTVTVSSASTKGPSVFPLAPCSRSTSESTAALGCLVKDYFP
EPVTVSWNSGALTSGVHTFPAVLQSSGLYSLSSVTVPSSSLGKTYTCNVDHKPSNTKVDKRVESKYGPPCPSCPAPE
FLGGPSVFLFPPKPKD~~QL~~MI SRTPEVTCVVVDVSQEDPEVQFNWYVDGVEVHNAKTKPREEQFNSTYRVVSVLTVLHQD
WLNKEYKCKVSNKGLPSSIEKTI SAKAGQPREPQVYTLPPSQEEMTKNQVSLTCLVKGFYPSDIAVEWESNGQPENNY
KTTTPVLDSDGSFFLYSRLTVDKSRWQEGNVFSCSVFHEALHNHYTQKSLSLSLGK